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NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- A3000 – further leaks
- Minute memory card
- Conqueror on test

ST

- Inside Interactive
- Risk reviewed
- New Digita duo

PC

- Windows 3 is coming
- Mural modules
- Deja Vu revisited!

CPC

- Myth on review
- Dark Century preview

PCW

- Price hike for 8000s

ARC•C64•MSX ATARI XE•BBC SPECTRUM•QL

SPECIALIST COLUMNS

EXCLUSIVE

• The original three Amstrad CPCs – now their successors are on the way

AUTUMN LAUNCH FOR CPC TRIO

Enhanced 464 and 6128 models join Amstrad's new £100 console... page 3

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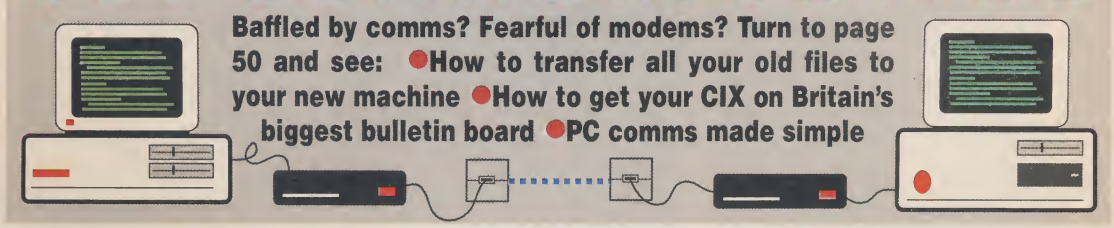

Baffled by comms? Fearful of modems? Turn to page 50 and see: ●How to transfer all your old files to your new machine ●How to get your CIX on Britain's biggest bulletin board ●PC comms made simple

ESSENTIAL PERIPHERALS

Read Shopping Express for 28 pages of Britain's best computer bargains

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Interactive cartoons; ray-traced games; it's for real

THE FUTURE OF GAMING: CD-I

The first Compact Disc Interactive game has been produced by French company Titus.

Breakout-clone *Titan* is the first game to utilise newly-developed CD-I technology. CD-I offers gamers and developers an unparalleled amount of power and memory.

Compact-Disc-based games at the moment are essentially little more than sophisticated loading devices. But CD-I offers the opportunity to actually play 'against' the Compact Disc.

As yet there are few opportunities to play *Titan*. The game was developed on a Mac II CD-I workstation. But Titas plans to release the game on the forthcoming CD Amiga console, CD PC Engine and Fujitsu's new 32-bit games machine the FM Towns.

Titan CD-I cost $250,000 to develop – more than four times as much as an Amiga version would have done. The interface between the CD-I and Macintosh II alone cost $70,000.

It holds 5Mb of graphics and a hefty 120Mb of music. Amazingly, the code only takes up 100K.

As a relatively simple game, *Titan* is a curious choice. But with such a new technology the firm wanted to play with something simple and to have beefed-up an already familiar format with stunning graphics and hitherto unheard of music capabilities.

Now the company is working on interactive cartoons, and is talking to Pixar, Lucasfilm's Industrial Light and Magic, and Buena Vista – creator of Roger Rabbit.

Titan says it wants to develop sophisticated graphics on expensive Vax minicomputers and port them over to CD-I format. If it is successful, owners of machines such as the forthcoming CD Amiga could be playing games with ray-traced 3D graphics on Compact Disc within two years.

"CD-I is definitely the future of game playing and most software houses are gearing up for it," said Titus' partner Eric Caen. "Smaller companies are going to have difficulties if they have been too slow or they can't afford the investment. It's very expensive. But the potential is incredible." ■

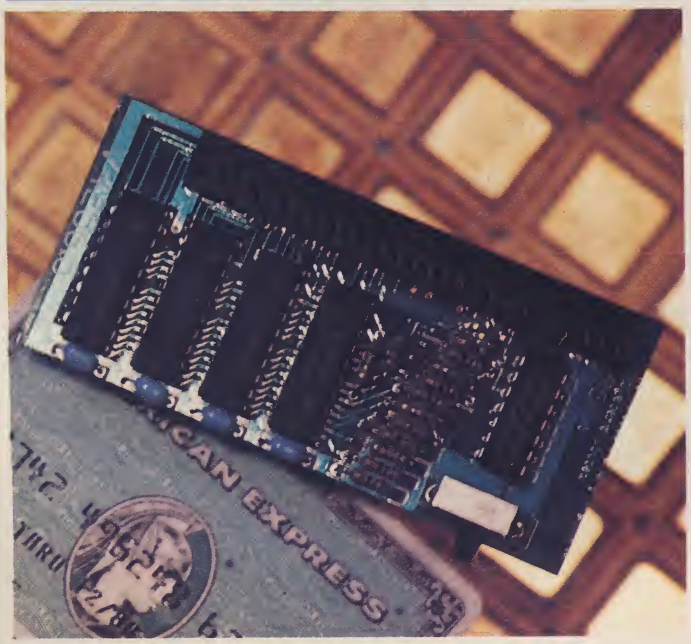
What is CD-Interactive?

CD-I is a standard developed specifically by Philips and Sony. It's also used as a general term for interactive CD technology. A full disc will offer 660Mb of storage – 8 hours of stereo sound. Static graphics screens could comprise 32,000 colours and animated graphics would have 256 colours.

The Philips CD-I machine won't be ready until end of next year. It should sell initially at under $1,000.

The difference between CD-ROM and CD-I is that the former is primarily a data storage solution while the latter offers the chance to take pictures and sound off the disc, and interact with it via a program, which makes choices as to what to display next. ■

MICRO MEMORY MANIA



A tiny upgrade board for the Amiga 500 has been launched by Memory Expansion Systems, measuring only four centimetres across. The little card is the smallest of a host of upgrade cards which enable A500 owners to use programs requiring 1Mb.

MES director David McGee told Express: "It's inevitable that all A500 owners will upgrade. By Christmas there are going to be loads of 1Mb-only products and games. If you're not upgrading then you're not getting the most out of your Amiga." The card costs £68. Call MES on051-236 0480. ■

Dangerous is too dangerous

MicroProse is to launch a new version of its hit action-adventure game *Rik Dangerous* – for those people who found it just too difficult to complete.

Rik Dangerous follows the exploits of an underground explorer across four levels. However, many hardened ST and Amiga owners found they couldn't reach levels three or four. By the time they had battled their way through the first two mazes they just didn't have enough lives left to finish the game– and cheats and pokes for the popular game have been pretty hard to get hold of.

The new *Rik Dangerous* will allow players to start on any level.

"People found that they could get through the individual levels but it always cost them lives, so they just didn't have enough to go all the way," explained MicroProse spokesman Martin Moth. "Each level has its own different emphasis on skills such as speed or planning or puzzle solving."

The new easier version will be out in April on the same formats as the existing game. Current owners of *Rik Dangerous* will be offered an upgrade "for around a fiver – just to cover costs". ■

Schools lag behind the Far East

The Japanese government is to kick off an investment program which will give schoolchildren better access to computers than youngsters anywhere else in the world.

The Ministry of Education in Tokyo plans to make Japan's children the most advanced in the world within the next five years. The investment will cost millions of pounds, but the authorities say it will be worth it.

By the end of the decade Japan will be able to boast the first fully computer literate generation in the world.

The government wants to install one computer for every two children in the equivalent of the third form. The ratio for students in higher education will be even higher.

In Britain's secondary schools the average student to computer ratio is about 50:1. ■

DSS bugged

Software used by the Department of Social Security to assess and settle claims is riddled with bugs, according to officers at Workington.

Those working on Operational Strategy, the Department's plan to computerise old-fashioned, paper-based systems, have found that:

- Computer-based claim forms are dated 28-2-52 – even though these claims have only been processed by computer since April 1989.
- Staff receive persistent reminders about faults that have already been corrected and urgent work that has already been completed.
- In the North West 40,000 pensioners due for an annual £10 Christmas bonus received the wrong amount.

Ken James, new technology officer for the National Union of Civil and Public Servants in Cumbria, received weekly reminders to retrieve the pension book of a dead claimant, even though the book was returned three months earlier.

As for the pensioners; "Some got cheques for hundreds of pounds, others

IBM goes for Unix

A new IBM RISC chip set, codenamed America, is set to take on the Unix workstation market dominated by Sun, DEC and Hewlett Packard.

The new RISC System/6000 Unix workstations use a seven-chip architecture capable of executing five instructions in one processor cycle. Running four times faster than a 33MHz 386 machine, the new system will be offered for as little as £6,300. ■

September launch for three new CPC machines

AMSTRAD CARTRIDGE CONSOLE DATE SET

Exclusive details of a new line-up of Amstrad CPC machines have been leaked to *Express*.

The three new machines will be launched this September. Speculation throughout the industry has been running high since initial details of a CPC console were revealed by *Express* last autumn

It is now clear that Amstrad will be launching a full line-up of new CPC machines based on improved technology and cartridge-based loading systems.

The entry-level machine will be an Amstrad CPC console. It will cost £100, but will be pitched as technically superior to 8-bit rivals such as the Sega and Nintendo. The plug-in cartridges will hold between 256K and 512K each and will cost about £15.

Top software houses in the UK and on the continent are already converting their top games for the machine. However, all have signed non-disclosure agreements described by one source as "absolutely vile".

Companies likely to be working with Amstrad will include US Gold, Ocean, Domark, and Activision. There is speculation that Virgin – already involved in the distribution of the UK market-leading Sega console – will also supply software for the Amstrad machine.

The second machine is provisionally called the 464 Plus. It is a tape-based machine with a full keyboard and a cartridge port added.

Amstrad is also hiking the technical specifications of the CPC series with either 32 or 64 colours on screen instead of the current 16. Total colours will be up to 256 – a considerable leap from only 27.

Hardware developers in Amstrad's Brentwood headquarters have also been concentrating on the CPC's sound capabilities. Current models are only capable of emitting three sounds simultaneously. The upgraded models will be able to handle up to nine simultaneous sounds.

All improvements are due to custom video and sound chips which have been under development for almost a year.

The third machine is the 6128 Plus. Again, this is an improved version of its predecessor with a cartridge port added.

The 464 Plus and 6128 Plus will be 100 per cent downwardly compatible and will be able to run all of the hundreds of CPC programs currently available.

And the CPC console will not be short of software. Games publishers will experience little difficulty in converting tape- and disk-based games to the cartridge format.

Amstrad has yet to set price levels for the 464 Plus and 6128 Plus. Marketing plans are far from complete for any of the new range, and the company is expected to stick to its usual policy of holding back any official announcement until the actual launch.

A spokesman for Amstrad told *Express*: "I haven't heard of any of these machines. I'm sure Amstrad have a number of product launches planned but we'll just have to wait until September to see if you're right."

The new machines will give the five-year-old CPC machine a real boost. The CPC console will be backed by a multi-million pound advertising campaign which will aim to make it one of next winter's biggest-selling home entertainment products. ■

• World Cup Soccer '90: *Italy here we come..*

Who will win the cup?

Britain's software houses are currently jostling for places in the World Cup squad of winning games which will fill our computer screens this summer.

Apart from MicroProse's extraordinary *Soccer II* (see *Express* 66) which utilises artificial intelligence, there's also Virgin Games' conversion of the arcade game *World Cup Soccer '90*.

The game will feature all the teams from the qualifying rounds of the competition – from the delightful Brazilians to mysterious Cameroon.

There are close-up views of the goals from either the striker's perspective or the goalkeeper's, as well as all the normal features of the game itself.

Virgin commissioned well-respected Hungarian software development team Andromeda to undertake the arcade conversion.

World Cup Soccer '90 will be released on all major machine formats later this year. ■

ER, WHAT IS IT?

What is this strange-looking creation? What madcap scientist can have designed such a creature?

Actually it's a very sensible device called the Maltron Single-handed Keyboard. It's been devised for disabled people and those who find themselves needing an extra hand at work.

The Maltron comes in two models – left-handed and right-handed. "It's mainly for those disabled people with only one hand. We see it as a way of getting them into work. It can be very tiring using the standard keyboard," said Maltron's Stephen Hobday.

"The second objective is for people who have to key-in data with one hand while performing other tasks, such as handling parcels, with the other."

A two-handed version is also available which claims to speed up typing by 30 per cent and reduce stress.

The Maltron costs £299 and is PC compatible. Call 01-398 3265. ■

• A review of the Maltron keyboard and its

Mole at Commodore conference reveals details of Amiga 3000

25MHZ AMIGA WILL CORNER THE MULTIMEDIA MARKET

Two weeks ago some 350 software and hardware developers, trade bigwigs and Commodore officials descended on the Holiday Inn in the Place de la Republique in Paris for a sneak preview of new Commodore products – specifically, the much-rumoured Amiga 3000.

All attendees were required to sign non-disclosure agreements and instructed not to talk to the press. However, *Express* managed to sneak in an observer just in case anything interesting happened. Our informant remains unnamed, and here is his report.

"The Amiga 3000 series is as detailed in *Express* last week. There are two models – the 25MHz and 16MHz machines, both of which run Motorola's 68030 chip.

"Reports that the machines will utilise the newly-launched 68040 chip are optimistic. Third-party dealers will be selling 68040 add-on boards months before Commodore manages to launch such a machine.

"It is worth noting that the 25MHz 68040 runs twice as fast as the 25MHz 68030 in real terms.

NOT READY

"Unfortunately, Commodore wasn't ready to tell all about its plans concerning the A3000. This is partly due to a wise desire not to have all its plans released to the trade or the public, and partly due to the fact that many plans have yet to be firmed up.

"Different answers were being given to the same questions at different meetings. The development people consider the 3000 finished, while the marketing wizards have still to do their work. Even at this late stage Commodore may wish to introduce a new version of the 3000 boasting, say, extra ports.

"The name of the 3000 has attracted much interest. Due to Acorn's A3000 machine it had been feared there would be some confusion.

"However, journalists have been calling CBM's new machine the A3000 for so long that a pseudonym seems almost pointless now. Either way Commodore is not releasing another name although 'Multimedia Amiga' has been suggested as a real possibility.

"Most certainly the A3000 will be shown for the first time next months at the Hanover CeBit, and it will run the professional-looking Workbench 1.4. Release dates rather depend on Commodore's ability to finish both machine and front end.

"One rather disappointing thought is that, despite the new Amiga A3000's impressive specifications on paper, it can, as yet, do no more than the existing A2000 machine with some added expansion boards.

"We will have to give the new machine a few months before we begin to see its true colours." ■

• The A200 is getting a big brother, already christened by some the 'Multimedia Amiga'.

Amiga goes multimedia

Commodore is working on a front-end interface for simple multimedia access.

The new system will offer users an iconic environment within which they can access video, CD, audio and other media.

Multimedia users will be able to weld these media and other applications together through a simple selection of option boxes.

Commodore maintains the Amiga is the ideal machine for multimedia because of its multi-tasking capabilities.

Date set for Fun School 3

Database Software is planning a new version of its top-selling education package *Fun School*.

Fun School 3 should arrive in May and will incorporate features of the new national curriculum. Database hopes it will enjoy the same success as *Fun School 2* which sold so well that it featured prominently in the Gallup games software charts.

The *Fun School* series relies upon a simple graphical interface which youngsters find easy to understand. The program comes in three difernt versions for varying age groups.

Database Software boss Chris Payne said: "It's a long way off so I don't want to say too much. But *Fun School 2* was a really fabulous program." ■

Apple: not just a bunch of WIMPs

• Apple customer service engineers on their way to an assignment.

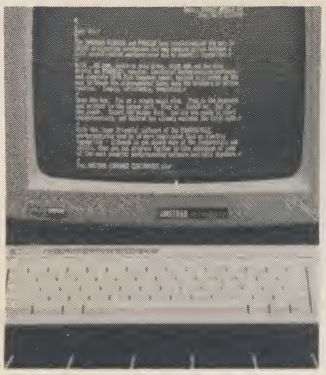
If you thought Apple was all about technical gadgetry and dreamy kit, think again.

The firm is gearing up for its forthcoming Challenger's Trophy – an event designed to test people's physical endurance to the limit.

The computer company is sponsoring the competition in which representatives of up to 150 companies compete in a compendium of gruelling sports events such as running, climbing, canoeing and cycling.

All the administration and logging will be undertaken on Apple Macintosh computers. Challengers will be held in Trossachs, Scotland between May 30 and June 2.

The event is aimed at companies and it costs a vast £3,500 to enter a team. The trophy is said to "provide a focus for your development of teams and team members." Those who feel they need focusing should call 01-351 5867. ■



• PCW: More money.

£30 million profit figure better than anticipated

AMSTRAD RECOVERY SURPRISES THE CITY

Amstrad confounded its critics and surprised City analysts last week when the company turned in pre-tax profits of £30.1 million for the six months ending December 1989.

While the figures compare badly with the £75.3m announced for the same period in 1988, they are better than financial pundits have been predicting and represent a considerable improvement on the company's only-just-profitable previous six months.

Amstrad's recovery is largely being credited to a good Christmas period which both helped to lift turnover figures (actually up from the previous year at £373.75m) and to reduce the company's backlog of unsold stocks.

The company was cautious about ordering stocks in the latter half of 1988 and used the buoyant Christmas market to offload stereo equipment and video cameras at low or even zero profit levels. These low-margin sales lines are said to have diluted profits made by Amstrad's more successful divisions.

It is reported that Amstrad will now pull out of the audio market entirely to concentrate on its computer, satellite dish and fax machine divisions, all of which performed reasonably in 1989.

Stocks remain high, though, of one computer line – the PC2386, top of the 2000 series which at one point had to be recalled because of faults in the hard disk drives. The company has enough of the model to meet demands for the next two years at current sales rates.

Amstrad has apparently learnt from the experience, which brought much adverse press comment and affected public confidence in the machines. Chairman Alan Sugar told journalists last week that the company will be paying more attention to the quality of goods in the future by carrying out "all the mundane and boring tasks that you have to do in a high technology business".

Added Sugar: "Anyone in the computer industry reading this will say 'It's boring. It's what all companies should do'. We're doing it now. Sorry – it won't happen again."

The company is planning to introduce a new product line per month from April this year. As exclusively revealed in *Express* this week and in our last issue, new computer products in Amstrad's pipeline include two enhanced CPC models, a CPC console, a 'super PPC' portable and an upmarket 3000 series business PC range.

Financial experts are looking for some fast-moving lines from the company as a firmer sign that it is well and truly on the mend, but the City analysts are already predicting £40m or even £45m profits for the financial year as a whole, with the less cautious future-gazers venturing guesses of £65m for next year and up to £90m once the company has fully recovered its equilibrium. ■

Amstrad PCW price hikes

Amstrad has hiked the prices of its low-end PCWs and the PC1640 because, the firm says, they aren't making enough money.

The PCW8256 and 8512 are both up by £30 to £379 and £479 respectively while the 1640 is increased by £50 to £649.

Amstrad will also end its bundling of Lotus *Symphony* with PC2086 machines.

The changes have been largely prompted by a new offer of one year's free on-site warranty on all Amstrad's range of business machines. The cost of this has, says Amstrad, "eroded some margins". ■

Controlled megaFLOPS

Controls on exporting 32-bit computers to Warsaw Pact countries could soon be relaxed.

The ban, which includes high-tolerance machine tools and a range of telecommunications equipment, was originally imposed by the 17-nation Coordinating Committee for Multilateral Export Controls (CoCom). Meeting in Paris last week, CoCom (which consists of all NATO countries except Iceland, plus Japan and Australia) seemed close to agreement on changes that will allow faster export-vetting procedures.

Meanwhile, new US government proposals to liberalise stringent controls on supercomputers could actually increase restrictions on exports of a high-end technology – including the chips themselves.

US computer industry executives spoke out against the new rules at a US Commerce Department meeting. It seems the Department's definition of 'supercomputer' covers any machine with a speed of more than 100 megaFLOPS (million floating point operations per second).

Because of advances in microprocessor technology, several of the latest desktop workstations and mini-supercomputers already exceed this speed limit – and these could get caught in the control net. ■

Superchip sets the pace

Intel is working on a chip capable of speeds up to 250MHz and 2,000 million instructions per second.

The chip is being touted as the central processor for desktop micro computers in the year 2000. With that kind of speed on board, developers will be able to dump today's user interfaces and opt for a 'human interface'.

In reality that could mean a human face on screen taking your commands and offering you options via audio communication. The chip would work so fast this would not slow computing activity.

The Intel integrated chip, coupled with other developments, will be powerful enough to offer full motion video and voice recognition. ■

Thomas gets tanked up

• Thomas: a new incarnation as a computer game.

Choo chooo. At last, Thomas the Tank Engine is to appear in a computer game.

The star of countless kiddies' books and the widely-acclaimed TV show is to star in a game by Alternative. The firm is already boasting that Thomas is the hottest character licence in Britain.

It's out soon on the big three 8-bit machines for £2.99 – ST and Amiga versions will follow at £9.99.

You'll be able to hear the famous song. Can you remember how it goes? Do do doo doo doo do dooo. Peep peep...*(Mental or what? – Ed)* ■

Fair play

The organisers of the first All Formats Computer Fair reckon it was such a success that they will be staging similar events every few months.

The show was billed as a chance for real enthusiasts to pick up great bargains. It only lasted one day but a two-day show has been pencilled in for the weekend April 28-29.

"It's clear that the show attracted the real hobbyist elements who were on the look-out for a good buy," said organiser Bruce Everiss. "This isn't a show where hordes of 14-year-old kids are all over the place nicking things off stands. People were buying things like printers and monitors and were prepared to spend money."

The second show will once again be staged at the Royal Horticultural Halls in London. Admission is £3. ■

PCs of weight

Scientists in the US claim to have proved that secretaries who switch from typewriters to word processors put on up to seven pounds in weight. This, they say, is due to the fact that all data and files are held on the computer rather than in filing cabinets. Also, typing on a PC requires less effort than with a mechanical device. ■

Psychiatric hospital's computer misused by patients

An inquiry has been ordered into a psychiatric hospital following a number of cases of computer misuse by patients.

One patient of the Park Lane Hospital on Merseyside is reported to have used the hospital's computer to set up a way of conning catalogue companies. He had gone on-line posing as a vicar and is alleged to have received hundreds of pounds worth of electrical equipment including a home computer. Much of the equipment had been sold to other inmates in exchange for tobacco.

Another patient had used the computer to print out an ID card of a Post Office Investigator. He used the card while on day release to enter houses and steal valuable articles.

Most disturbing was a convicted rapist who had used the computer to track down one of his victims. He had sent out letters all over the country with 'On Her Majesty's Service' printed on the envelope in an attempt to track the woman down. Fortunately he was caught at the computer by hospital security staff. ■

COLVIN BILL IS 'TOO INFLEXIBLE' CLAIM

America's leading authority on computer crime has warned that Britain's attempts to crack down on the problem are too inflexible.

Donn Parker says Michael Colvin's ant-hacking bill could spell long prison sentences for young hackers who were only looking for some fun. And he's called for a review of the legislation with the introduction of a wider spectrum of more imaginative punishments

One suggestion is to ban less harmful hackers from using computers for a fixed period of time. That appears to be working well in the US.

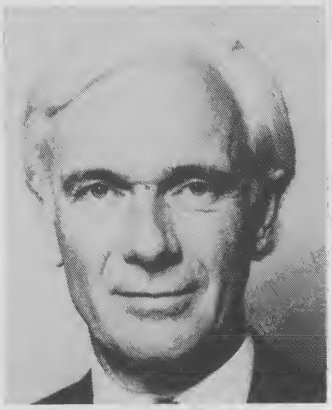
Colvin's bill, which recently passed its second reading in the House of Commons, currently provides penalties of up to six months in jail or a £2,000 fine against 'bedroom hackers'. Those with serious intent face up to five years in jail.

But Parker, who has studied computer crime for the past 20 years, says that, although legislation is desirable, such strict penalties are not the answer.

He says most computer hackers are people with personal problems – not hardened criminals.

However, Colvin's bill is almost certain to become law later this year. It has all-party support and only needs go through the committee stages before it becomes an act.

Meanwhile, Emma Nicholson MP has called for the Computer Misuse Bill to cover the possibility of damage done to data by workers while taking industrial action. ■



• Colvin: too inflexible says American.

Guinea pig computer aids neural research

A computer has been developed by IBM which can produce electrical patterns similar to the brain-waves of a guinea pig.

The enormous machine is only capable of reproducing the activity generated by a small section of the rodent's grey matter. But although it doesn't sound much this is quite a breakthrough in neural network technology.

The region of a guinea pig's brain which the machine emulates is called the hippocampus. That contains about 10,000 interlinked cells, and controls fundamental parts of the animal's metabolism.

The firm says it will be expanding the machine for its neural network research programme.

The ideal is to produce a computer which works in the same way as a human's brain. However, most researchers agree that that aim will most certainly not be achieved within the next 50 years.

Nevertheless, progress over the past 10 years has been remarkable. IBM chief neural scientist Roger Traib commented: "This constitutes a new human endeavour. When I started we were only looking at this as a model for what we saw in the lab. Now we are beginning to conduct experiments on it as if it were an organism in its own right.

The researchers are using the computer to study the roots of epilepsy by looking at the effects of abnormal bursts of activity in a cluster of modeled hippocampus neurones. ■

CHEAP CHIP CHAPS CHOPPED

Police in California have arrested four men on suspicion of computer chip robbery.

The arrests followed a gun battle at A H Computers in Santa Ana during an attempted robbery. The gang had stormed into the factory brandishing shotguns, herding employees into one small room before starting to stuff bags with computer chips. Police arrested the four suspects shortly after the robbery.

The authorities have spent the past 12 months trying to crack the lucrative computer chip crime wave. Gangs are making millions of dollars selling chips and processors on the black market.

These commodities are relatively easy to steal, simple to sell and worth a lot of money.

The Santa Ana robbery followed a similar raid in Fountain Valley only one hour earlier. Police are still unsure whether there is any connection between the two events.

The four Vietnamese suspects are understood to be members of the notorious Cheap Boys gang. However, they are refusing to talk to the police.

The gangs have attracted a great deal of publicity in the United States, largely due to the extraordinary nature of the robberies.

One gang is reported to have raided a chip plant by sliding down through the roof, carrying automatic guns and dressed as ninjas.

No similar cases have as yet been reported in Britain. ■

Knee program wins award

A computer program which can detect cartilage problems has won the Toshiba Year of Invention Award.

Researchers at Queen's University in Belfast developed the system which can help doctors diagnose torn knee cartilages. This will be especially useful to sports medics.

A vibration sensor is placed on the knee of a patient and the computer program analyses the data. The doctor can then tell if the problem stems from a damaged cartilage.

The program beat 3,000 other entries from around the world. ■

Off the wall

How would you like to see your computer-aided artistic creations writ large?

There is a new solution just launched in the States for PS/2 systems. It can produce computer images on almost any five foot by five foot surface including wood, concrete, brick, glass and cloth.

The Michelangelo Paint Jet System connects to the printer controller and sprays, line by line, the desired image. The paint is a non-drip acrylic that dries quickly. The system costs a mere $100,000. ■

Bristol computer fire

Police are investigating a fire at Bristol University which destroyed computers valued at an estimated £100,000.

It is understood that arson is suspected. The police are looking into reports that vandals set the University building alight and stuffed lighted rags covered with petrol through the letterbox.

A spokeswoman for Bristol University said an electrical expert was also being brought in to look at all other possibe causes for the break out. ■

Wrist phone

High-tech chic is apparently 'very passé' now we're into the caring Nineties – but some people aren't giving up.

Telecom Australia and the South Australian Institute of Technology have set up a joint fund for the development of wrist-based telephones.

Within two years they'll be running a pilot scheme which, if successful, will extended across the country. What next? Wrist PCs? ■

WHO accused of spreading AIDS virus

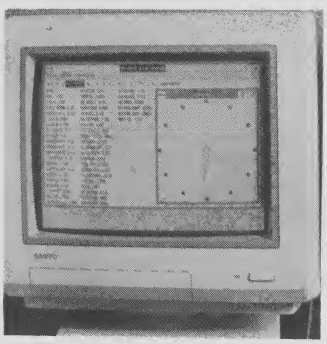
The attempt to blackmail UK PC users with the AIDS computer virus was part of a secret plot by the World Health Organisation, according to the man accused of organising the virus attack.

Joseph Popp, a medical computing consultant arrested by the FBI in Willowick, Ohio in January, told a court hearing that World Health Organisation officials had used false names to set up PC Cyborg – the Panamanian company to which victims of the Trojan horse disk were told to send $378 to to get their encrypted data back.

"The allegation is completely false," insisted Salah Mandil, director of WHO's worldwide computer and telecommunications operations, adding that Popp's only connection with WHO was that he worked for two weeks last December as an adviser at a training workshop in Nairobi.

Popp is currently awaiting extradition from the US to the UK to face charges because he did not send the disk to any US PC users.

The authorities accuse him of mailing 20,699 disks and say he had plans to send more. He is being charged with demanding money with menaces, and with attempted blackmail. ■



• Windows: *a friendlier environment*

Windows 3 due soon

The PC's somewhat cantankerous operating system is becoming more user-friendly all the time.

The latest development from Microsoft promises to bring IBM's standard closer than ever to the classic user-friendly features of the Apple Macintosh. One of the first applications promised is Aldus *PageMaker* 4.0, launched on the Mac last week.

Windows 3 will be launched in April along with some third-party developments which take advantage of the new system. It's 100 per cent downwardly compatible and will also run perfectly on anything from an 8088 to a top-end 386. When loaded, *Windows 3* will immediately recognise which environment it is working under and will boot accordingly.

We are promised that some applications actually look like they are running on a Mac. It will cost £75. ■

Rainbow Islands: a guaranteed No.1 hit

Arcade conversion *Rainbow Islands* hits the shops next month – and it's almost guaranteed to go to number one

By Adrian Price

Ocean's game has the sort of pedigree which makes a sure-fire hit. It was a roaring success in the arcades, and is the sequel to the hit game *Bubble Bobble* from Taito.

Ocean can consider itself fortunate to have gained the licence. Firebird, which originally converted *Bubble Bobble* to computer formats, was also given the rights to *Rainbow Islands*. But that label, which was owned by British Telecom, was sold to MicroProse. Taito then refused to let MicroProse convert the game, saying it had no agreement with the American firm – only with British Telecom. *Rainbow Islands* was then put on hold for a few months until Ocean came along and took over the licence.

Rainbow Islands is one of those cutsie games which are so popular at the moment. *Bubble Bobble*'s Bub and Bob were cute little dinosaurs – now in the follow up they've evolved a few million years into small humans wearing dungarees.

The object of the game is to cross the seven Rainbow Islands which contain all sorts of nasties. Each island contains four levels and you must make your way to the top of each level – you can collect power-ups and get extras like multiple rainbows, extra lives and little red slippers to let you run faster.

This is said to be a very addictive, colourful and challenging game. It's out on all major formats at the end of March with the usual pricing structure. ■

Suspended sentences for German computer spies

THREE KGB HACKERS GET OFF LIGHTLY

Some may have been more interested in the unification of Germany, but for computer buffs all over the world the real news from Bonn last week concerned the fate of the 'KGB hackers' accused of selling Western military secrets to the Soviet Union.

All three were found guilty of espionage. Markus Hess, 28, was given an 18-month sentence, Dirk Brzeszinsky, 30, 14 months and Peter Carl, 35, was given a two-year sentence.

A year ago the hackers were arrested and accused of spying for the Russians. It soon became apparent that Carl was the KGB contact man. A former casino croupier, he had travelled to East Berlin to hand over floppies crammed with highly-sensitive information – data, gathered by Hess and Brzeszinsky, from military networks in America, Japan and Europe – all gleaned from a ground floor flat in Hanover.

The real story starts even further back, at the Lawrence Berkley Laboratories, California, when Clifford Stoll decided to investigate a bill for 75 cents of unaccounted for computer time.

As he told *Express* at the time, "If it had been $1,000 I wouldn't have thought anything of it. It's like if your house collapses you just assume there has been an earthquake. But if you find a tiny termite hole, you think, 'Jeez, I had better investigate'."

Stoll discovered that the laboratory's computers were being accessed from an unknown outside source which was using the system as a way into MilNet, a government network handling military as well as scientific data.

At this point Stoll changed from mildly inquisitive scientist to serious sleuth. He found the bill arose from someone creeping into the system via the telephone lines (in the summer of 1986 this was pure Hollywood). He persisted and when words like 'biological warfare' and 'NORAD' cropped up he called the FBI. They were not impressed.

Stoll set a trap and designed an intriguingly complex program called *SDI Net* guaranteed to get the hackers interested. Hess and Co. fell for it and spent two hours rummaging through the program. Time enough for Stoll to trace their call to what had already become the world's most notorious centres of illegal computer activities – Hanover.

Some months later a man in Pittsburgh wrote asking about *SDI Net*. This time the FBI were convinced, the Pittsburg man's contacts were traced to East Germany and after an 18-month investigation the hackers were arrested.

The court was told that the three had not obtained any information that could threaten the security interests of either the USA or West Germany, which might account for the lenient sentences.

Another man was charged with espionage, but committed suicide before the trial started. ■

Opus opts for 286 PC range

Yet more PCs have been launched by busy manufacturer Opus – this time it's a 'new look' 286 range.

The low-cost machines run at 12MHz and offer 1Mb of system memory, upgradable to 16Mb. There are three expansion slots and the now customary offer of either 3.5-inch or 5.25-inch floppy disk drive.

The machines fall into line with their sister ranges, sporting a look not dissimilar to that of the widely publicised Datasafe PC launched late last year. Curiously, there are no hard disk equipped models on offer.

Prices start at a very reasonable £899 for a monochrome Hercules model and £1,199 for a VGA option. This follows the launch of a 386 model just over three weeks ago.

Meantime, Opus is setting up a deal with five Soviet agencies whereby its machines can be assembled and sold in Russia. The components will continue to be manufactured at the company's Gainsborough factory. ■

Credit cards face the computer

Credit card fraud will soon be a thing of the past thanks to a newly-developed computerised security system.

Leicester-based company Vistra Mark has developed a new card and reader combination which will foil all but the most enterprising villains. It's a solar powered card reader which features a passport sized LCD screen.

When a card is passed through the reader the tiny screen shows a full-colour image of the real owner's face. If that doesn't fit the visage of the card holder then something is clearly amiss. The cards will be extremely difficult to forge – unlike conventional signatures.

The reader isn't much more expensive than electronic systems. ■

COMMENT

Amstrad has finally stopped being embarrassed about producing games machines – and about time too...

Amstrad is in grave danger of emerging, at last, from its wilderness years. Since the 1640 range's launch in 1987, it has been chasing after the Holy Grail of serious business computer sales – having had extraordinary success with its characteristic bish bosh bash, pile it up, shove it out, can't say fairer than that approach of the 1512 series.

There have been two broad strategies underpinning its move up market. Firstly, and somewhat implausibly, the company began babbling tech specs and pushing the features of its machines, not just their prices. More worrying for the domestic side of computing, it showed marked reluctance for anything to do with games. It was as if some Serious Analysis from An Expensive Market Research Company had conclusively proved that Amstrad's attempt to sell 286 and 386 machines would be shot through if it also handled the Spectrum.

NONSENSE

Demonstrable nonsense, of course, but via such thinking is history shaped. A similar philosophy has permeated both Atari and Commodore at different times. The ST, remember, was first pitched as a serious machine and consequently achieved little in its first 18 months. And inside the Amiga-loving Commodore, you'll find a PC firm almost desperate to get out: it's pleased with the success of the Amiga, but would much rather that it had happened with its PCs.

As a consequence of this muddled approach, Amstrad's home market push since then has looked like little more than tokenism. The "Games are bad for our image, Mr Sugar" line of thinking resulted in the woeful PC 200 – the PC that passeth all understanding. Amstrad could only have a games machine if MS-DOS conferred legitimacy. More nonsense, as *Express* said at the time.

But now, finally, there are distinct signs of life on the Amstrad games front. This Christmas, the Spectrum had its best sales for some years. All it took was a decent marketing campaign – which Amstrad could only do when it had committed itself once more to the leisure market.

RELAUNCH

More interestingly, there is the relaunch of the CPC series, topped off by the console. The range has been sadly, badly overlooked by Amstrad. When adherents have called for CPC price cuts, bundles, re-promotions, re-jiggings or anything to animate a much liked format, Amstrad has resolutely looked the other way and busied itself with trying to appeal to the corporates.

Come September, the CPC will start looking like a seriously attractive purchase. The new blood coming into the CPC world will benefit exiting owners as well: software houses like nothing so much as vast numbers of new owners to whom to tout their wares. Further, the trickle of software houses ceasing to write for the CPC will now be stemmed.

And what about the Spectrum? If Amstrad is having a major re-think on the CPC, then a reappraisal of the Spectrum can't be far behind. Rumours are winging their way round about a Spectrum console at £70. Others have it on the very best of authorities (ie, their own) that a enhanced SAM Coupé-type affair is being pondered by Brentwood.

At this stage, it's all grist to the rumour mill. But what matters is that after a great deal of faffing about, after allowing Atari and Commodore virtually a free run at the UK, Amstrad is back in the business of games. ■

FROM The ARCHIVE

ONE YEAR AGO

As usual Amstrad was in the news, but the powers that were were not too pleased about it. For once there were no superlatives surrounding the latest batch of financial figures, and the profit level for the six months up to the previous December slumped by 16 per cent from £90.1m to £75.3m.

Among the 'areas of difficulty' cited was a delay in the PC2000 launch caused by the failure of a custom-built chip.

Atari unveiled their Pocket PC at the *Which Computer?* Show in Birmingham. Called the Atari Folio to begin with – the name was later changed to the Portfolio to avoid a copyright clash – it was due to reach the High Street by mid-summer. It was also heralded as the Sony Walkman of computing, but it's still too early to say about that...

Brian Clough returned to computer games via CDS's *Brian Clough's Football Fortunes* – a combined computer/board game with counters, cards and fake banknotes. Some observers were unkind enough to suggest that CDS were cashing in on the publicity our Brian had just attracted after clipping sundry football fans around the ear.

Menzies (pronounced Ming-ease in case you didn't know) decided the ST vs. Amiga battle should be fought out on its shelves. It seems that sales of the ST hadn't gone as well as expected, so the giant newsagent cut the outlets selling STs from 45 to between 15 and 20 – and let the Amiga into 14 stores.

These days the battle rages through the Express Mail columns.

After just one court hearing Schneider pulled out of its battle with NCR over the name Tower, which it had originally planned to use for its AT – and which the American giant had been using for years on its middle range of computers. A spokesman for NCR stated, "We are pleased to have reached an amicable solution to the problem."

Meanwhile Schneider, together with Castle Computers and Silica Shop, were castigated by the Advertising Standards Authority. Castle for advertising *Operation Wolf* before it was available and Silica for continuing to run an ad which underpriced its ST upgrade by £49. Schneider fell foul of the ASA by claiming that its portable AT was made in Germany, when the machine was actually made in Japan.

TWO YEARS AGO

Activision pulled out of the Personal Computer Show, accidentally fuelling rumours of its imminent closure. The story was that, because Telecomsoft had decided to place all its US business with Activision, Activision would pass over all its UK business to Telecomsoft.

Absolute rubbish of course. "It's just a typical example of paranoia and gossip in this industry," said a spokesman. Quite.

Distributors were complaining that Commodore's Amiga System bundle had the lowest trade margin ever offered.– cut by half to both distributors and retailers.

Enormous rows were said to have ensued, with Commodore retorting that they were spending £500,000 on advertising an attractively-priced bundle at a slow time of year for the trade. Has anyone noticed margins getting any wider recently?

Currys announced that it was cutting the number of its stores carrying computers down to their 40 or so superstores. A spokesman confirmed the general view that since Dixons (which owns Currys) sold more computers than they ever had, it should be the sole retailer of computers in the future. "We'll probably concentrate on more traditional business like washing machines and tumble dryers." How true.

Spectrum Holobyte's *Falcon* was nominated a record seven times for the Software Publishing Awards in America. The *F15 Flight Simulator* was later released by Mirrorsoft, to great acclaim.

Sources: *New Computer Express, Computer Weekly, Computer Trade Weekly, MicroScope, PC Dealer, Computer Talk, Datalink.*

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VISA

PC IMMUNISE

The virus problem doesn't look like it is going away, though the arrest of the alleged perpetrator of the AIDS scam may deter a few would-be virus disseminators. And for those who are worried about infection, there's a new product from Cascade Systems of Harrogate.

PC Immunise makes a check of a current system configuration, including the state of the system files and boot sector. It then compares this fingerprint with the actual state of things at any time after. The comparison 'checkpoint' can be reset to take account of new configuration options and the like.

This is all very laudable, but it seems to me there are two distinct flaws in the concept. Firstly, there is no attempt to check for any existing virus on the system before the installation of *PC Immunise*. It would be quite possible, therefore, to create checkpoint data which inadvertently included a virus. The program would then never spot it.

Secondly, *PC Immunise* only makes a check when you ask it to. Surely this kind of software should run in the background all the time that the PC is running? It can then report at the earliest opportunity any discrepancies between what should be on the hard disk and what actually is.

Without continuous checking, the onus then always falls to the user to run a check. Even if a call is built into an `AUTOEXEC.BAT` file, a fast acting virus would still have plenty of time to do its thing before being spotted.

LIKE CLOCKWORK

Recently, I've been re-examining the shareware version of *Simon*, the well-named pop-up editor, and I have come across probably the best way to encourage registration. As I'm sure you're aware, shareware suppliers only make their money when users register their copies of the software. Relying on people's good faith, while nicely idealistic, is not that lucrative.

There have been various techniques tried, including limiting a program's function and offering incentives like printed manuals or updates to the software. I've even heard tales, probably apocryphal, of programs which zap your hard disk if you don't register.

What *Simon's* author, Clockwork Software, has done is to introduce Nigel, the clockwork salesman. Assembled in with the program are a series of 'reminders' from Nigel, encouraging you to register, just to get rid of him.

Nigel's comments are never impolite, but are frequent enough and annoying enough. The full version, as well as having a printed manual, has no Nigel. And at £31, it's not expensive, either.

COUNTING YOUR WORDS

I'm currently looking at a selection of word processors costing under £100. They vary in facilities and ease of use as the packages do in any price bracket, but most have one thing in common – they won't let you count the words in your document easily.

The best that many of these inexpansive packages provide is to give you a word count after doing a spell-check, or through use of an external program. This is of no use to any journalist – a sizeable section of the word processing community.

You see, writing regularly for periodicals you need to be able to check the length of your piece quickly, and while you're producing it. This column, for instance, is 1150 words each week.

It is often also necessary to split a document up into sections of specified length. A boxed-out panel, like the game review on this page, will have its own separate word limit. The facility to word count a block is therefore a valuable extra – available to my knowledge only in *Protext* and *PC Write*.

Software suppliers please note, journalists testing word processors will be better disposed towards your product if this simple programming feature is built-in.

And spare a thought for poor Nige. As he says, often: 'A salesman's job is not always easy: long hours, not everyone is pleased to see you.'

DOUBLING UP

Although the Japanese 20Mb 3.5-inch floppy is not yet with us – it may not be long – already available is a 2.88Mb Toshiba device, housed and marketed in Britain. The Cristie Super Copydisk is an add-on device in an external case, which comes complete with a driver card. Cristie is working with PC suppliers to incorporate it in forthcoming PCs.

The driver formats a disk to 2.88Mb, twice the capacity of the still scarce high-density 3.5-inch drives. The new drive is compatible with 1.44Mb and 720K versions of the disk, but the new capacity is supported by a data transfer rate of 1MBPS, four times the speed of a standard 720K unit.

The new system is not cheap, at £459 for the drive and expansion card, but prices should drop if and when the units become more popular.

MITSUBISHI RELEASE

Mitsubishi is one of the front-runners in the world of colour printing, and it has solidified this position even further having just released the stunning S340 Sublimation Dye printer, which can produce a miraculous 16.7 million colours at 150 DPI.

This printer is state-of-the-art stuff, and consequently retails for an impressive state-of-the-art price – £9188.50. For more details, contact David Bridson at Pathway PR on 0442 874006

Simon Williams

PC GAME of the WEEK

DEJA VU II

Mindscape • £24.99

CLICK TO CONTINUE
You stare into the mirror and see yourself; Ace Harding, second-rate detective. Your haggard face reminds you of the nightmarish time when you

When *Deja Vu* first appeared on the Apple Macintosh five years ago, it was seen as the start of a new era. In those days text adventures ruled supreme, so the idea of examining an object by simply clicking it with the mouse instead of typing in 'examine pencil sharpener', was a real breakthrough.

At that time *Deja Vu* made full use of the Macintosh WIMP operating system, and it was a good game to boot.

In these days of *Leisure Suit Larry*, *Zak MacKraken* and other graphic explorers, however, icon-driven adventure games are no longer a novelty. Indeed, it has taken icon simulations quite a while to come up with a sequel to *Deja Vu*, and this time it has got stiff competition.

Nevertheless *Deja Vu II*, subtitled *Lost in Las Vegas*, is something else. It will only run on an EGA or VGA display, but provides graphics every bit as good as a Sierra adventure together with a mind-boggling range of sound effects.

The PC's speaker is normally only capable of the odd beep, but smash a mirror in this game and you'll hear tinkling glass. A trip to the train station is almost as good as 'The Glory of Steam'.

Everything is controlled by the mouse, so buying chips in the casino involves clicking on your wallet, picking up the five dollar bill you find in there and moving it over to the cashier's window. It all works very well once you've got used to it, and it looks attractive too.

The plot follows on from where the original left off with Tony Malone deciding you owe him $100,000, roughing you up a little and dumping you in a cheap Vegas hotel with just a week to get it and a minder to make sure you do. It may have taken some time coming but *Deja Vu II* was worth the wait!

THE ARCHITECT SKETCH

AutoDesk has long been viewed as the leading CAD software producer for the PC. Fewer people probably know about the architectural version of its main product, *AutoCAD AEC Architectural*, though. This specially-designed version of the program copes with everything from schematic diagrams through to full 3D modelling. The architect can now design blocks of flats or abattoirs and view them from any angle simply by moving a viewing icon to the right point on the schematic and specifying the angle of view.

• AutoCAD AEC Architectural: *its on the Mac as pictured, and now on the PC, too.*

Once the modelling has been done, the rotating knives, or any other feature of the building can be viewed in full colour using the companion packages, *AutoShade* and *AutoSolid*. These goodies add colour rendering to any *AutoCAD* drawing, be it conveyor belt or trough.

The third stage, ideal for presentations to prospective clients, is AutoDesk's *Animator*. This package can take *AutoCAD* drawings, animate them, combine them with sections of live video and put the whole thing together for a truly professional presentation. Who knows, with that little lot even John Cleese might have made it as a mason.

AutoCAD AEC Architectural has just been released in three new versions, any of which can take data from any other. You can now run the software on a Mac II, a Sun workstation or a 386/486 PC. The last of these can make use of up to 16Mb of uninterrupted memory, using the Phar Lap DOS extender card.

We're obviously not talking small change here, and the new version of *AEC Architectural* costs £1380. And that's without the 386, a minimum of 2Mb of memory and a digitising tablet!

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COMMODORE (includes monitor)

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8088; 4.77/7.16/9.54mhz; 640K ram; 3 slots; enhanced keyboard. Includes: serial/parallel ports; clock; 1 or 2 360K drives; hard disk controller; MS-DOS 3.21, GW basic & manuals.

			MONO £	EGA £
PC 10	SD		476	745
PC 10	DD		526	790
PC 20	HD20		677	943

(As PC 10 SD but includes hard disk drive)

SAMSUNG (monitor not included)

ALL MODELS INCLUDE 1 YEAR ON-SITE MAINTENANCE

80286; 8/12mhz; 1mb ram (exp. to 5mb); 5 slots; enhanced keyboard. Includes: serial/parallel ports; clock; 1 x 1.2mb & 1 x 1.44mb drives; hard disk controller; MS-DOS 3.3, GW basic & manuals.

			VGA £
SPC 6512/1	DD		1003
SPC 6512/2	DD	HD20	1306

HYUNDAI (monitor not included)

8088; 4.77/10mhz; 640K ram; 5 slots; enhanced keyboard. Includes: serial/parallel ports; clock ; 1 or 2 360K drives; MS-DOS 3.3, GW BASIC & manuals.

		MONO £	EGA £
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SUPER 16TE	HD30	583	651

* SPECIAL INTRODUCTORY OFFER ON SUPER 16TE SD MONO ONLY . . . INCLUDES 12" MONO MONITOR £378

HYUNDAI PC XT WITH MONO MONITOR
£378

80286; 8/12mhz; 640K ram; 6 slots; enhanced keyboard. Includes: serial/parallel ports; clock; 1 or 2 1.44mb drives; MS-DOS 3.3, GW BASIC & manuals.

		EGA £	VGA £
286x	SD	738	762
286x	HD30	972	1083

AKHTER (monitor not included)

8088; 4.77/7.15/9.54mhz; 640K ram; 1 slot; 84 key compact keyboard. Includes: serial/parallel ports; clock; 1 or 2 720K drives; MS-DOS 4.1, GW BASIC & manuals.

MINI-PC		MONO £	VGA £
MINI-PC	SD	441	554
MINI-PC	HD20	479	593

80286; 8/12mhz; 1mb ram (exp. to 8mb); 7 slots; enhanced keyboard. Includes: 2 serial/2 parallel ports; clock; 1 x 1.2mb drives; hard disk controller; MOUSE, WINDOWS, MS-DOS 4.01, GW BASIC & manuals.

		MONO £	VGA £
AT 286-12	SD	779	876
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MONO	SAMSUNG	MA 4671/3/5 FST	14"	88
MONO	AKHTER	MONO 12	12"	65
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MONO VGA	PHILIPS	BM 7749 FST	12" P/WHITE	107
MONO VGA	AKHTER	VGA 14M FST	14" P/WHITE	99
MONO VGA	SAMSUNG	ML 2611	12" P/WHITE	81
MONO VGA	SAMSUNG	ML 4571	14" P/WHITE	95
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CGA	PHILIPS	CM 8833	14"	219
EGA	HYUNDAI	HCM 1420	14"	256
EGA	PHILIPS	CM 9073	14"	317
EGA	SAMSUNG	CM 4551	14"	281
VGA	HYUNDAI	HDM 401 FST	14"	253
VGA	PHILIPS	3CM 9809	14"	372
VGA	SAMSUNG	CJ 4581	14"	281
VGA	AKHTER	VGA 14	14"	273
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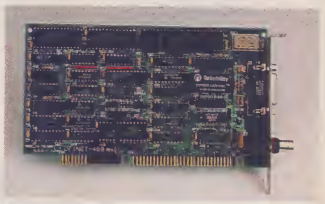

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MDM 2400 PC CARD MODEM
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FREESCAPE COMES OF AGE

Last week I took a trip to Aldermaston to visit Incentive Software, that fine company which brings us the much-acclaimed 3D game system, Freescape. Indeed, fans of *Driller*, *Dark Side* and *Total Eclipse* will need no reminding that the latest Freescape offering, *Castle Master*, is now a matter of weeks away.

Castle Master will be Incentive's first 16-bit development, and at this stage it shows. There's more than four times as much data in the new offering as in *Total Eclipse*, and besides featuring over a hundred rooms and thousands of objects, it also brings you face to face with rats, sharks, spooky spirits and the very, exceptionally, evil Igor.

The game has been developed on Incentive's own editor, which is designed to enable objects to be manipulated and resized while the game is loaded. In fact, Ian Andrew, Incentive's resident proprietor, showed me the editor as it removed the castle's drawbridge, resized it and altered its attendant conditions. All good stuff!

Furthermore, it appears that Incentive's decision to give up trying to do the marketing as well as the programming has paid off. An agreement has been signed with Domark, leaving Andrew and the rest of the team to do what they do best: write games!

The only criticism that can be levelled at *Castle Master* is that it is still Freescape, with the same instantly-recognisable environment of straight lines and flat planes.

But Andrew asserts that 3D games are the future, and I'm inclined to agree with him. And having played *Castle Master* for several hours in its all-but-completed state, I'm convinced that it is a classic in the offing. Now all we can do is sit and wait!

BBS ADDS ST

Barnsley-based bulletin board Phantom Viewdata has made 'changes to it's [sic] structure,' adding an ST area, edited by Michael Day, and opening up over 75 per cent of the system to guest callers.

The four-year-old board now boasts more than 1,400 pages on-line, including multi-user games, a private mailbox system and 'Fleet Street,' a user-editable section for newcomers.

Membership is a reasonable once only £7.50, and Phantom is a Viewdata only BBS available 24hrs daily at V23 and V22 speeds on 0226 340425.

ST JOB CENTRE

Do you fancy working for Britain's best and brightest ST magazine, *ST Format*? Turn at once to *Express*'s recruitment ads for more information!

CHEAT AND PROSPER

Following the overwhelmingly-positive reception to my inclusion two weeks ago of a set of cheats for games (I haven't received a single negative response, hem hem), here's some more.

• *Outrun*: in play, type STARION. You'll get the following:

B – extended play
Q – program info
T – 10 seconds extra
S – different screen
D – save screen, and
X – quit (oh very useful, I'm sure).

Thanks for those utterly wicked pokes to Mark 'The Wicked One' Ayling.

Steve Carey

BBDP: ALL THE NEWS

On two or three occasions I've referred to bbdp Electronics, an artfully-titled Scottish company. Since I've had half a dozen requests for more information, I now treat all our readers to the full, unexpurgated version of 'What They're Up To'.

bbdp manufactures DMA to SCSI host adapter boards, designed to interface (horrible term, simply horrifically horrible) between the ST's DMA port and a hard disk drive with either a separate or embedded SCSI controller.

Aimed primarily, I'd guess, at the hard disk drive DIY market, the board is claimed to support absolutely any hard disk drive connected to a SCSI controller.

The device comes without on-board clock, hence keeping down costs to a very reasonable £49.95, including DMA cable and software.

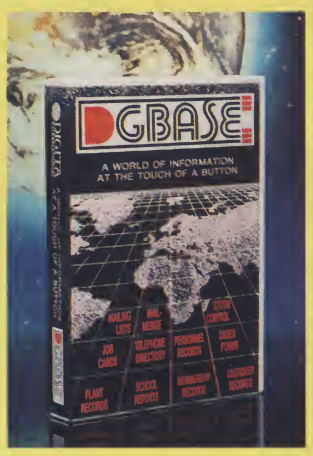
And there's more, for bbdp also sells a complete hard disk drive based on the interface and cased in a unit similar to a full height 5.25-inch floppy drive, costing £350 for a 20Mb drive.

If you're interested in either item contact Bob Bell at bbdp Electronics, 9 Grey Craigs, Cairneyhill, Fife KY12 8XL, or call 0383 881768.

DGBASE RECORDS ON ST

Digita International has been busily preparing and then releasing two new packages. The first, *DGBase*, is a database program written specifically – and so far solely – for the ST.

DGBase offers fast access to stored data and the ability to create customised reports, including office/personnel records, labels and mail-merging, without the need for technical knowledge. It also allows simultaneous access to four files, puts to hand user-definable fields without having to re-enter data, and has a record size of 32K, which should be ample for most needs.



• *Digita's* DGBase, a *new £49.95 database.*

System 3 also hails from Digita, and it comes in as a three part system – hence, I suppose, the name – that is very evidently and quite unashamedly modelled on Database's enormously-successful integrated suite, the much-praised *Mini Office*.

System 3 units are comprised of, firstly, an invoicing module that produces professional invoices, statements, debtors' reports and VAT summary. Secondly, stock control handles a full inventory of up to 999 stock items, stock valuation, re-order report and price lists, while, thirdly, the cashflow controller gives the user full financial management, VAT report, income and expenditure accounting, and so on.

System 3 is integrated, so that information fed into one part of the program can be retrieved for use by any of the other parts.

Finally, *DGBase* and *System 3* cost £49.95 each and are available from Digita International. For more information phone the good people on 0395 268893.

PLAYING TIP

CHASE HQ

How about amassing some gigantic scores in Ocean's *Chase HQ*? Jason Baker from West Yorkshire has spent the last month burning rubber to discover this little gem.

At the start of the game, change into top gear and push the spacebar continuously until you reach a speed in excess of 1000kph.

Try not to crash the car before the road splits. If you fail and start to spin, then just steer the car down the lane indicated by the arrow. This interesting feat can bring you scores in the millions. Try it and see.

ST GAME of the WEEK

RISK

LEISURE GENIUS
• £19.95

Board game translations have been in vogue for months, and now the classic war game has got its chance. There is, unfortunately, little opportunity for exciting innovation with the objective here being, as always with war games, to smash your enemies into retreat off the face of the map.

Risk is played on a large diagram which has been faithfully reproduced from the board game. You position your armies in territories and then attack adjacent land. In the board game the outcome of such fights was decided by tossing the dice. Here, your ST takes over that crucial role, deciding the scores and moving you if you've won.

Risk is played as a series of turns. In your turn you can attack land and fortify your positions. If you succeed in capturing land, you'll receive a card.

As you build up sets of the cards, they can be traded in for armies which may be placed on the map to fortify your front line.

Much of the strategy involved in the game is centred around the early positioning of the armies. At the start of a game you receive limited armies which you put in location across the board. By building up small pockets of large armies you can tear across the map, capturing land everywhere.

The ST version of *Risk* differs from the board game with the addition of a neutral player. This participant plays only a defensive role, vehemently fighting you off when you launch an attack, but remaining passive the rest of the time.

Indeed, if you enjoyed playing the *Risk* board game, this computer translation is going to rate highly among your ST games even though much of the game's appeal has suffered in conversion.

Playing the board game was great. A lot of the fun was in crowding round the board on a rainy day and spending a leisurely few hours tyrannizing land and crushing your fellow players into surrender.

That basic appeal has all but vanished because of the physical difficulty involved in assembling several of your cronies around the screen.

However, the loss you'll mourn most as a result of conversion is in the dice. With the computer taking control of all dice throwing, a sizeable chunk of playability, the true element of risk that was inherent in the board game, flies straight out the window.

Nevertheless, if you're the sort of *Risk* fiend who enjoys playing the game even when you can't persuade your friends to participate, you'll have a great time practising your game skills.

Which is just as well, since there's little else to justify spending twice the price of the board game.

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AMIGA

NEW AMIGA LAUNCHED

Yes, it's true – a new Amiga has been launched, the Amiga A1500. But how could this information have escaped the attention of *Express*-resident newshound, Colin Cambell? The answer is simple – it is not a Commodore machine.

The Amiga A1500 from Checkmate Systems is a complete replacement case for the Amiga 500 that will give 500 users most of the extras present on the 2000, without having to pay a 2000-like price. Sounds good so far.

The A1500 comes in various configurations, depending on your needs. The base unit consists of a completely new system unit for housing the A500 circuit board and a new keyboard case to provide A500 users with something that they have been crying out for – a separate keyboard.

To add to that '2000 feel', the A1500 moves the Amiga disk drive so that it faces the front (*à la* 2000 again) and even provides internal space for the addition of either a second drive or any half-height 3.5-inch hard drive.

Indeed, if you're involved in areas such as the video or music industry, then the 1500 could be just what you're after, as the whole system unit can be mounted in a standard 19-inch rack. According to Checkmate, many big names within the music industry have expressed interest in the new machine on the strength of this feature alone.

If looks aren't enough, then many extras can be added on top of the base unit. Surprisingly, the first option that Checkmate offers is the addition of a 2000-compatible video slot, allowing the 1500 to use devices such as NewTek's Video Toaster and MicroWay's Flicker Fixer board. Next up is a full spec internal MIDI interface, turning the 1500 into a true musician's tool.

If it's true power computing you're after, however, then Checkmate's expansion system is for you. The expansion unit simply plugs into the top of the base unit to provide the 1500 with three expansion slots which can be used to connect 2000 cards such as processor accelerators to the 1500.

Not only that, but Checkmate claims that its system can be taken further than the 2000. If you ever get to a point where all three expansion slots are filled, just buy another expansion rack and you're away.

For more details, contact Checkmate Systems on 01-923 0658.

MANIC MINER ON AMIGA?

Oh no, something terrible has happened – *Manic Miner* has been released on the Amiga. I kid you not, for that classic Spectrum game – which I have been asked to point out was actually a rip-off the that classic Atari game, *Miner 2049er* – has been converted to run on the Amiga by the publishers of the original, Software Projects.

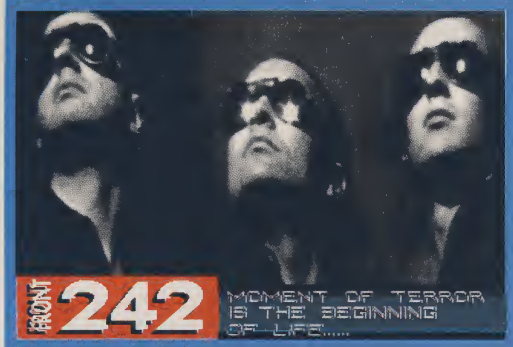
For those of you who haven't ever played *Manic Miner* (where have you been all your life?), the game is probably one of the biggest success stories in the history of computer gaming. The game involves you controlling Miner Willy through screen after delirious screen of platform action.

Furthermore, the game disk contains not one, but two different versions of the game. The first (for the purists among you) is an almost pixel-perfect conversion of the Spectrum original, while the second is an Amiga-ised copy that boasts sampled sound, full scrolling and up to 64 colours on screen.

How much for this gem of a game? Well, with tongue firmly ensconced in cheek, £9.95 to you, matey. By the time you read this, Amiga *Manic Miner* should be available in all good software outlets.

Jason Holborn

AMIGA AND THE POP MUSIC SCENE



Front 242 is just one of the many bands that have found the Amiga to be invaluable.

The Amiga isn't just a great machine for handling the more mundane task of sequencing within the music industry – look hard and you'll find the Amiga cropping up everywhere. The Amiga is being used for a multitude of different applications such as the production of album covers, acting as a dedicated sampler, etc.

One particular album to look out for is *Totem* from Venus Fly Trap. Not only is the Amiga used to produce the packing art work in the form of various Mandelbrots, but all the sampling to be found on the album was carried out using a bog-standard Amiga 500. One look through the album's credits confirms this – Alex Novak (vocals), Curtis (guitar, vocals and Amiga 500)...

Further examination also gives away the names of the packages used by Venus Fly Trap. For starters, the Mandelbrots used on the sleeve artwork were produced using a program written by Kevin Clague of San Jose, CA – that program being called *MandelVroom*. Sample sequencing on the album was handled by Andreas Tadix' excellent *Game Music Creator*, which is available from Seventeen Bit Software.

What is more, fans of those Body Music giants, Front 242, may have noticed a certain Amiga-look to many of Front's album covers. Just check out albums such as *Official Version* and *Front By Front* and you'll see sleeve artwork produced on the Amiga. On *Front By Front* in particular, the sleeve artwork is attributed to a certain talented individual called Digi-View (never heard of him).

PLAYING TIP

OPERATION THUNDERBOLT

If you reach a high score and enter your name as WIGAN NINJA (including space), then you will have infinite continues to play with as well as the ability to skip to the next stage by pressing F7.

But remember that the game will still end if you fail to retrieve any hostages. Also you can enter SPECCY MODE to make the going even harder!

C Hodgson, Cardiff

BREAKING DOWN THE BORDERS

Ever wanted to open a borderless window within AmigaBASIC? Well now you can with this little snippet of code from *Express* reader Barry Whitehouse of Frome in Somerset. The code works by altering values within the window structure of the currently open window.

```
LIBRARY "intuition.library"

windmod& = WINDOW(7) + 24
mode& = PEEKL(windmod&)
mode& = mode& AND (2 ^ 26-1-1024)
mode& = mode& OR 2048
POKEL windmod&, mode&

CALL RefreshWindowFrame(WINDOW(7))
```

AMIGA GAME of the WEEK – CONQUEROR

Rainbow Arts • £24.95

A good few years ago a young man made quite a name for himself by producing an innovative computer game. That game was *Elite* and the young man was David Braben.

More recently, Braben produced another innovative game to demonstrate the new Archimedes machine. This second offering was originally called *Zarch*, and it featured a strange 3D graphical effect.

The game was quickly released by Firebird on other machines under the title *Virus*. It was almost immediately hailed as a success. And now David Braben's superb landscape technique has been improved and updated to form the basis of Rainbow Arts' latest release, *Conqueror*.

Conqueror is a combination of arcade action and strategy, with the player controlling a fleet of tanks across a battlefield. You have the choice of either playing in attrition mode, in which you have to think out your moves and control one light, two medium and two heavy duty tanks, or in action mode, in which you play with just one tank.

You must outwit your enemy and blast his tanks while building up the strength of your own fleet. But beware, the other side can also become more powerful as the game goes on!

The graphical appearance of *Conqueror* is very similar to *Virus*, mostly as a result of the landscape-generating technique, but the other sprites in *Conqueror* look much more solid then in the futuristic flight game. The tanks are very well drawn, having a great deal of military character, and the scorched landmarks give the whole thing a definite war-torn look.

But what of the gameplay? Well *Conqueror* has bags of the stuff! The single tank option is great fun, consisting of simple mindless blasting action, but if this gets too boring then you can try taxing your brain and going for the more strategic bent.

However, if you like your warring action, you will find that you can get into and enjoy playing *Conqueror* very easily. Indeed, if you fancy the idea of driving a tank, then you shouldn't miss this one!

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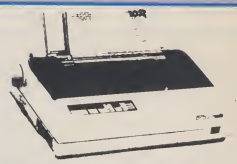

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SPECTRUM

IN THE MOULD

If you're after a good old traditional horizontally-scrolling shoot-'em-up where explosions look like real explosions and the baddies seem to want to fly into your bullet-spraying path, *P47 Thunderbolt*, from Firebird, might be the one to exchange a tenner for.

Just for once it's not set on the planet Xzcfghj!kk with you fighting the evil alien race of Vfrug?mxypx, or something equally unpronouncable, but instead you've been picked to single-handedly pilot your WWII plane through levels infested with enemy planes, helicopters and missiles.

It's not really superlative or superior to any fellow comrades in the packed fleet of shoot-'em-ups but, ignoring the historical unfeasibility of it all, it's a jolly good blast from boot-up to switch-off. Thankfully, things don't fly around the screen ridiculously fast so even uncoordinated or just plain old Speccy owners will get something out of it. Probably a bad case of joystick-wrist.

MUSIC MAGIC

The Spectrum's image of being a bit of a dodgy musician, equal in talent with Minogue, Donovan and the very short one with ginger hair, could be buried once and for all with the impending release of *Music Writer*. This is a music creation utility which, if it lives up to the pre-release promises, will transform your home-made ditties from the usual 'Symphonies for a Mentally Disturbed Flying Insect' into works of beauty.

Unusually for a Speccy utility, the whole thing is controlled with a WIMP front ends that 16-bit owners always seem to be boasting about. So it's a pointer, cute icons and pull-down menus with which you access the program's three-part score-writing system to start composing your masterpiece.

Music Writer is going to be WYSIWYH – What You See Is What You Hear – and the whole emphasis seems to be on experimentation with the various musical symbols available. Also on offer, for your delight and entertainment, is a bank of 10 changeable voices, all the major and minor keys, seven of the most common time-signatures and the ability to incorporate crescendo, accent and diminuendo marks into pieces which apparently allows for 'much more expressive music than is usually available on the Spectrum.'

This impressive-sounding utility is set for release in a few weeks for £19.95, and it comes complete with a ring-bound manual that promises to guide absolute beginners through music notations and WIMP.

It's stupid to get excited about a press release, but *Music Writer* really does look like filling the gap in countless Speccy-owning musicians' lives. Unfortunately, it's not available to 48K owners,so any gaps it plugs will be 128K-sized only. Send an SAE to G Rowland, PO Box 49, Dagenham RM9 5NY.

BOAST IN THE POST

Speccy owner James Abram has had to upgrade to an Amiga, owing to the computer at work. But his letter to me also contained some good news. James reckons: "Most (Spectrum) games are better than their 16-bit cousins (except for graphics)."

Further, James has got lots of rare second-hand Speccy items to sell. I usually direct anyone selling stuff to the classified section but, as James is flogging hard-to-obtain bits and pieces like Plus 3 and Microdrive repair manuals, I will let it go. Contact him at 44 Virginia Road, Albrighton, Wolverhampton, West Midlands WV7 3NP.

Robin Alway

HINTS AND CHEATS

If you went up to someone in the street and said: 'GOODBYEANDTHANKSFORALLTHEFISH,' the chances are you'd be hit hard and repeatedly. But typing the same (with no spaces) into *Super Bike Tranzam* (by CodeMasters, hence the naff title, I suppose) gets you infinite time and lives, at least according to a bundle of tips I've just been sent by a bloke with the odd, not to mention stupid, name of Miktor.

Falling out of the same envelope was a poke for *Treasure Island Dizzy*. It has the same effects as the Multiface ones I printed a few weeks back but this time it can benefit the whole community of Speccy owners who take the trouble to type it in (leave out all the bits with *s but not the end markers), save it for posterity, type RUN and play their *Treasure Island Dizzy* game tapes.

```
10 FOR N=23437 TO 1E9: READ A: IF A>256 THEN GO TO 30
20 POKE N,A: NEXT N
30 RANDOMIZE USR 23437
40 DATA 221, 33, 198, 92, 17, 0, 1, 62, 255, 55, 205,
    86, 5, 48, 241, 33, 165, 91, 34, 61, 93, 195, 198, 92
50 DATA 62, 120, 50, 189, 175, 175, 50, 194, 175 : *NO FLAMES*
60 DATA 62, 120, 50, 114, 180,: *DIZZY - HAWK*
70 DATA 62, 218, 50, 136, 177, 175, 50,
    130, 177, 50, 121, 177,: *AMAROG*
80 DATA 62,120, 50, 148, 179, 50, 128, 179,: *ALLIGATOR*
90 DATA 62, 218, 50, 122, 178, 175, 50, 115,
    178, 50, 109, 178,: *DRAGONS*
100 DATA 175, 50, 25, 246: *INFINITE LIVES*
110 DATA 195, 0, 97, 999: REM END MARKER
```

Multiple thanks go to Miktor for those. Hope a gratis, complimentary and cheap to the point of being FREE piece of software is at least nominal reward!

PCW

STUFFING WITH TIME

Here we are into the 90s already. Time marches on (its stomach anyway, as Napolean might have said). It flows on eternally, unalterably in one direction, its workings – an unfathomable mystery. Rather like the Bath one-way traffic system, in fact.

Anyway, your PCW is well equipped to measure the flow of time and show you the seconds of your life ticking away and this BASIC program will tell the time from the PCW's memory:

```
10 DEF FNT(X) = X-INT(X/16)*6
20 PRINT "Any key to zero timer" :
  a$=INPUT$(1)
30 POKE 64502,0 : POKE 64503,0 :
   POKE 64504,0
40 PRINT "Any key to stop timer" :
  a$=INPUT$(1)
50 HRS = FNT (PEEK (64502!))
60 MINS = FNT (PEEK (64503!))
70 SECS = FNT (PEEK (64504!))
80 PRINT "That took"HRS"hours
  "MINS"mins"SECS"secs
```

You can use the above to time operations or even put time limits on actions. For example, this listing will ask for an answer and, if no key is pressed in 10 seconds, will print the 'Time up' message. You're restricted to a one-letter answer, by the way.

```
10 DEF FNsec(x)=x-INT(x/16)*6
20 POKE 64504!,0 : ans$="" : secs=0
30 PRINT "Please give your answer.
   You have ten seconds to comply."
40 WHILE ans$="" AND secs<10 :
  ans$=INKEY$:secs=FNsec(PEEK (64504!))
  : WEND
50 IF ans$="" THEN PRINT
  "Sorry, time's up" ELSE PRINT
  "Your answer is ";ans$
```

PLANNING PERMISSION

Factotum is a new product aimed at *LocoScript* users that will help you with your planning. It requires *LocoMail*, *LocoScript 2* and *LocoFile* to run and provides little featurettes like birthday reminders, basic income and tax planning, monthly budgeting, inventory writing and a few letter routines set up for you – all done from within your favourite word processor.

However, *Factotum* looks a useful sort of package for *LocoScript/Mail/File* users who find this sort of thing useful and, apart from the documentation which is a bit messy, it may well be worth a look at £14.95. Details from Tudor Systems, 0622 861775.

WHERE'S MY B.... DRIVE?

It seems some PCW users with B drives have found that they disappear for no reason; *LocoScript* persists in showing drive B as 'not fitted' and refuses to list any of the files on disks therein.

Apparently, a strong light source such as an anglepoise lamp shining directly into the drive can fool the B drive into thinking it isn't there.

Rob Ainsley

MSX

A JAPANESE INVENTION

Towards the end of last year, two new Konami titles were unofficially launched in the UK – MSX 2 games, both on Mega ROM cartridges. If you are a regular reader of this column you may have already seen my mini review of one of these titles, the game *Contra*, also known as *Gryzor*.

The second of the two games is called *King Kong 2*, and it has taken a while to review due to a slight problem regarding language – more of that later.

Although *King Kong 2* appears to lack the special in-built eight-channel sound chip that Konami has used on titles such as *Nemesis 3*, the music and effects, nevertheless, are very good. Is it just another Kong game? No. *King Kong 2* is a 3D type multi-screen adventure with enemies to defeat and magical spells to use.

The object of the game is to rescue Lady Kong and various weapons are scattered around the playing area to help you. There are also sections in the game where you converse with various characters to gain vital information about the game.

Unfortunately, the importers of this game forgot that all the text in these conversational sections is in Japanese, which is really a shame as *Kong* has the makings of a very good game. The graphics are particularly good, as are the sprites and colours – just what you expect of Konami games in fact. How much we are missing out by not understanding the Japanese text is a mystery. I still found playing *King Kong 2* quite a challenging experience.

Could I recommend this game? Well, in spite of the language problems, I would say yes, but only for the fun factor and graphics.

SPRING SALE

Capri Marketing has asked me to mention some MSX titles that are now being sold at special prices, so here goes with some of the best buys.

Firstly, Firebird's *Elite* is now £6.99 and is a must if you don't already own a copy. Next, at £9.95 we have *Scrabble* from Leisure Genius.

Furthermore, Brian Clough's *Football Fortunes* is £7.99 and *Deus Ex Machina* is £3.99. Also just in is *An Introduction To MSX* by Tynesoft, reduced from over £14 to only £4.99.

Capri Marketing can be contacted by phoning 0628 891101, or, by sending an SAE to 9 Dean Street, Marlow, Bucks, which will secure a software list – but do mention MSX software.

Keith Neal

LISTING TIME!

J Hancock of Dorset sent a listing that auto runs CSAVED BASIC programs. Type:

```
10 POKE &HFC18,82:POKE &HFC19,85:
POKE &HFC20,78:POKE &HFC21,13:POKE
&HF3FA,240:POKE &HF3FB,251:CLOAD
```

Save with ....SAVE"name", CLOAD and then CSAVE your BASIC program. To auto run the program, use RUN"cas:" .

CPC

TWO WHEELED WAGON

Flying back from Paris the other day, (ooh, I got that in neatly, didn't I?), something struck me. No, It wasn't my carrier bag full of duty-free, or even exed Steve Carey (I'd sat on his hat). It was the fact that every time the tanks' guns in *Dark Century* went off, surely they'd tip over backwards?

I'll explain. We were over there to visit Titus – producers of such hits as *Wild Streets*, *Knight Force* and *Crazy Cars* – and to take a look at *DC* in all its raytraced, 3D glory.

DC is basically a tank-simulation, where you not only have to design a tank to defeat the enemy's own hardware, but you then have to charge around the surface of a frozen planetoid first finding the bad guy's hardware and then blowing it to little, tiny pieces!

DC is a one or two-player game – you can either pit your skills against the computer, or swap barrages with a human opponent. *Dark Century* relies for a great deal of its effect on its graphics, which are really quite impressive. And most striking of all is the futuristic styling of your battletanks – including the use of just two wheels, one either side, instead of the more conventional tracks.

Which brings me back to my previous question. How come the things don't tip up when the guns fire?

We'll find out soon enough. The CPC version is nearly finished, and when it is, you know where to come for the definitive review...

LE KICK OFF

Titus, apart from producing some really sexy games recently (graphically, I mean – for heaven's sake) in the UK, are about to unload a British treat onto the French games market.

Titus bosses Herve and Eric Caen have signed a deal to distribute Anco's excellent *Kick Off* across the channel. We'll give them a few weeks to practice, then call up a couple of French mags to see if we can arrange a friendly (ho ho ho) international...

FOR GODS' SAKE

I never thought I'd see the day when I had a single good word to say about Speccy ports.

Well, now that day is here, and it's not one good word but several.

The game in question is System 3's *Myth – History in the Making*. It's a four-level battle between good and evil, one lone mortal against the gods.

Not that the gods are bad, you understand. They've simply been led astray by the extra-nasty Dameron, a thoroughly unpleasant deity. He's succeeded in persuading the oh-so-nice but ever so slightly naive good gods that good is evil and evil is good.

Only a mortal can undo Dameron's damage, and he has to battle against the combined resources of all the gods in four separate time zones. And who exactly is that man? Well, but of course, you guessed it, that man is you.

Myth is basically a platform arcade adventure. You control a small but well-animated sprite collecting orbs and other useful objects, all the time avoiding natural and not so natural hazards or battling evil beings.

Level One sends you straight to Hell – what a start! Here you have to collect five orbs, plus numerous weapons with which to defend yourself from the extremely unpleasant creatures you'll meet along the way. These include zombies, corpses hanging from nooses and demons. Fire-spitting gargoyles also somewhat hamper your progress, as do pits of brimstone.

The second level – if you survive the first – takes you to the world of ancient Greece. Here you have to collect another five orbs, but, although, you'll face much danger too, play your cards right and you could get to recoup some of your lives (you'll need 'em).

Level Three pitches you straight in against a longboat full of Vikings. Get past them and there are trolls and wraiths to battle past. Odin and Thor are the gods trying to put a stop to your progress here, and if you make it to the end of the level you get the chance to best them in a showdown.

The fourth and final level takes place in ancient Egypt. You've got to raise King Tut from the dead – and then kill him. Don't ask me why. Only when you've done that do you get to pit your wits against that evil basket Dameron, cause of all the trouble.

If *Myth* sounds like it's got a lot going on, that's because it has. Each level is an epic in itself, and as a whole it's one big game. With only a few colours to play with, the programmers have nonetheless used them imaginatively, and the main sprite, although small, is highly detailed.

And not only does *Myth* look good, it plays well too. The puzzles are well thought out and challenging, but mixed with arcade action that requires split-second joystick control. All in all, it's nothing short of a corker.

Cost is £9.99 on cassette and £14.99 on disk.

TELLY MAYHEM

"Are all our computer programs, games, accounts, word processing and datafiles going to be useless after 1993 when the new television Channel 5 starts transmitting?"

I am afraid I don't know, Mr L Mash of Wakefield, why?

"I understand that Channel 5 has been allocated channels 35 and 37, thereby wrecking channel 36 on which computers are tuned.

"If this is the case, then surely whoever takes up the Channel 5 franchise should be expected to pay for the re-tuning of the nation's computers?"

Ah yes, but most CPC owners use monitors, not TVs and modulators. Besides, surely, if you unplug the aerial first there will be hardly any interference from TV stations?

"Do any of your staff or any readers know anything about this matter?"

Do they indeed? If you've got any contributions to make to the great Channel 5 television debate, or anything to say about CPC-ing in general, write in now to: the CPC column, *New Computer Express*, Beauford Court, 30 Monmouth Street, Bath BA1 2AP.

Rod Lawton

C64

TYPE 'N' CHEAT

I like 'cheats' for arcade games that anyone can enter, even the cartridge-less, so keep sending them in. Two for this week, starting with *Indiana Jones and the Last Crusade*.

Hold down the S, F, I and M keys to enter cheat mode, then keys 1 to 5 will get you through the current level and key 6 will get you to the next level. On *Rick Dangerous*, to re-start a game at the last level visited rather then wading through them all again, type the wonderful word 'flufomatic' on the high score table and, hey, presto!

FANZINE REVISITED

A while ago now I mentioned a group of four adventure columnists collectively calling themselves Inter-Action, who were going to be producing an adventure fanzine.

The first issue has now appeared and, my spies tell me, that it is very good indeed. The fanzine is called *Harlequin And Steel* and is laser printed on A5 paper, so that quality is naturally rather nifty. If you like *Adventure Probe* then you'll really like this, as it is full of reviews and tips for adventures and, unlike *Probe*, the occasional arcade game to boot.

For details write to Inter-Action at The Cottage, Ashford Carbonell, Shropshire SY8 4DB. You might ask them how they chose the magazine's somewhat unusual title.

THERE'S MORE

For a fanzine that has been around a while longer try *Adventure Coder*. This is all about writing adventure games, but a new section appeared in the latest issue (number 7) which should be of special interest to all Commodore 64 owners who want to learn machine code.

The first article in the series occupied eight pages and is an enthusiastic guide for all the beginners to this particular area of advanced programming. Issues cost one pound each, cheques made out to C Hester (the cheerful editor, Chris Hester), and the address to write to is 3 West Lane, Baildon, Near Shipley, West Yorkshire BD17 5HD.

MELLOWING INTO BOOGIE

The Little Computer People program, as his owner referred to it, is now four years old. Further, this thinking of Howard brings on a wave of nostalgia and I wonder how Allan, the owner/programmer is getting on.

I bet he is knocking out a mean boogie on the piano. Could there be a link between being an artist at the computer keyboard and being a terror on the eighty-eights?

Pete Gerrard

REVERSE MODE

I received a letter saying that using `CHR$(18)` to turn reverse mode on from within a program doesn't work. It does, but only if you print stuff on the same line. Thus `PRINT CHR$(18);"REVERSE MODE"` will work, but `PRINT CHR$(18):PRINT "REVERSE MODE"` will not. It has to be on the same text line.

YOUR FORMAT

PC 10
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BBC 18

QL

ANNOUNCING QPAC2

Tony Tebby's QJUMP has just announced *QPAC2*, a new package of QL pointer accessories. *QPAC2* is a development of QJump's popular *QRAM*, and it provides a set of desktop accessories that are similar to those available on the Mac.

QPAC2 consists of a set of programs intended to assist the user with the niggly jobs that need to be carried out if you want to use your QL efficiently.

Mainly *QPAC2* carries out file, job and channel management, hotkey allocation and Things. All functions are menu-driven, with short-cut menus for functions that are used frequently.

Things is a brand new concept: from the Things menu, you can list all the Things in the system, with the type of Thing identified where possible (executable, language extension or general purpose), together with the jobs that are using the things.

Things that can be done with Things include executing them (like executing them from disk/Microdrive, but faster, as they are already in memory) and waking them. Further, a Button menu can be used to create on screen Buttons which can execute or wake executable Things.

Buttons are small menus belonging to sleeping jobs, which allow you to execute or wake programs using a single 'do' operation on the button. If you are using a mouse this then makes it as powerful as the keyboard hotkey facility.

QPAC2 is an exciting development for the QL, as it allows for an operating environment streaks ahead of anything on the PC, Amiga and ST, while even approaching that of the venerable Macintosh at a fraction of the cost.

QPAC2 is available now for the cost of £49.90, plus £1.50 p&p. Write to QJUMP, Youngs Garage, King Street, Rampton, Cambs CB4 4QD.

By the way, if you already have *QRAM*, it can be returned in part-exchange for *QPAC2*, saving you £20. *QPAC2* is, I should mention, only suitable for those of you with disk-based systems with memory expansions.

PACKET RACKET

I have seen several messages recently from QL users, asking for information on how to use QLs for the fast expanding branch of ham radio.

Is there a new-found need for updating my recent piece on the subject? What do you all think? Write in to the QL column, *Express*, Beauford Court, 30 Monmouth Street, Bath BA1 2AP.

FRACTAL REPORT

I've just received issues six and seven of John de Rivaz' *Fractal Report*. John seems to have abandoned his QL for a PC – a shame.

Issue Six, however, contains an article by John Topham describing how he used his QL to investigate a chaotic dynamical system called Attraction Basins. His article contained several interesting screen grabs. Worth a look.

John Torofex

BBC

PRINT IT

To make your BBC pay its way, you need paper printouts. However, in the past hard copy was slow, expensive and came up poor quality to boot. Now, though, cheap printers capable of good quality graphics are common.

DTP programs, in particular, get the very most from your printer, cramming more dots onto the page than you thought possible.

Indeed, an examination of the humblest dot-matrix on your desk should reveal at least three graphics modes (Normal, High and Quad), two emulations (Epson and IBM) and two fonts (Draft and NLQ).

So, what, you may reasonably wonder, are the best printers for your much-beloved BBC?

The market is currently dominated by dot-matrix printers, with 24-pin models superceding the 9-pin variety, although inkjets are making a strong push. There are both colour and mono printers in both divisions and prices range from the very reasonable £150 to the more costly £1,000.

I would advise against models at the lower end of the market. Instead I would go for reliability in the shape of one of the Epson range.

My office workhorse at the moment is the highly-regarded FX850, which is fast, has good paper handling and offers a choice of NLQ fonts.

If, however, you are looking for true correspondence quality, I would plump for the DeskJet by Hewlett Packard, the Rolls Royce of printer makers.

The DeskJet has many unique features including 300DPI resolution, expandability (via cartridge slots), compatibility with the HP LaserJet and, last, but by no means least, it uses good old-fashioned A4-sized paper!

Further, if I was in the market, my colour printer would most likely be the Integrex, although the Star LC10 Colour (and the 24-pin version) are better dual purpose machines.

Andrew Brown

ON-LINE OR NOT

Even checking whether a printer is on-line or not can be a nightmare. This was pointed out to me by my colleague, Matthew Fifield, now coding a major program conversion. Here is his solution to the problem.

```
1000 X=ADVAL(-4)                          REM Number of chars free in buffer
1010 VDU2,1,1,1,1,3                       REM Send null characters to printer
1020 FOR WAIT=0 TO 100: NEXT WAIT         REM Wait for printer to finish
1030 Y=ADVAL (-4)                         REM Check buffer again
1040 IF X>Y THEN PRINT "Printer not On-line"  REM If buffer not empty printer not on-line
```

XE

SOUND AND VISION

You've all heard about the incredible sound and graphics effects available on the 8-bit's big brother the ST, right? But what you may not know is that the sound chip in the 400/800/XL/XE is easily the match of the ST's silicon, and can knock spots off most other 8-bit machines.

Fine thinks you, if you're a talented programmer maybe you can make use of that music power, but what if you're just a humble, budding musician? Well, there's a widely available music program that will enable you to create stunning scores and play them on your 8-bit Atari without any knowledge of programming or even music!

MCS

Music Construction Kit from Electronic Arts – 0753 49442 – puts a stave (the 'spaces and lines' upon which musical notes are written) on your screen. Below the stave, there's a range of notes, time and voice selectors and twin volume controls. There's also a complete set of icons including a piano to play a recently composed piece, paste pot to snip out bars of music and place them anywhere else, scissors, disks and so on.

The package comes complete with several scores that you can play, and there's a range of printer drivers so you can print out your own scores and distribute them to members of a band etc.

Well worth a look for musos and the plain interested. *Music Construction Kit* costs £14.99 from mail order outlets.

Edmund Blake

ARCHIMEDES

ART NOUVEAU

CAL Ltd has recently sent through a copy of *Art Nouveau*, the new Arc art package. Though perhaps less well-known than Clares' or Minerva's offerings, it nonetheless holds its head up well with either.

Sporting all 256 colours of mode 15, *Art Nouveau* opens with a completely clear drawing slate. And it takes control of the whole Arc – no multi-tasking on a program which demands 640K.

Further, menus are called with the Menu mouse button and pop away again as soon as it's released. A single menu bar up along the top of the screen governs all selections, with a status bar at the bottom of the screen showing current settings.

The artistic scope of the program is wide to say the least, with most of the now-common facilities of 16- or 32-bit art packages.

As well as the standard point, line, arc, curve, rectangle, ellipse, circle and polygon tools, there are more unusual ones like radii line, parallelogram, triangle and regular polygon.

All the drawing elements are created in real time, as you would expect, though size and rotation of polygons are generated in separate stages, rather than as one movement.

Effects are mainly ascribed to the brush tool, which can be picked from an existing picture, shrunk, expanded, stretched, flipped, sheared, waved and squiggled. These last two effects are best described as wave distortions in the x and y planes. Brushes, like sprites, can be of any size.

Pixel and pattern editors are included in the package as is a colour cycling editor. This latter is particularly useful for spectacular effects as you can specify up to 32 colours which will be cycled through as you draw.

Colour effects extend to logical colour combinations and the use of a 'special' colour as a mask when merging pictures. Graded fills can also be used to good effect for highlighting.

Text facilities include a font editor which can design 8, 16, 24 and 32 pixel square fonts, as well as modify those supplied with the program.

The supplied fonts are reasonable, without being exceptional. It would be good to see Acorn's rescalable fonts incorporated into any possible upgrades of the program.

In the final analysis *Art Nouveau* is a decent art program, well presented and it is offered at a good price. While it may not have some of the bells and whistles of other contenders in the field, it majors on the the solid foundation of getting good pictures onto screen or paper. At £42.50 it is also good value. The downside to all this is that the program needs 1Mb of memory to run.

Call CAL on 0698 733775 for details, and while you're at it, ask the good people over there exactly why their logo has a school master wielding a cane! This oddity should take a little more explaining than even the finer points of *Art Nouveau*!

SECOND SOURCE

A follow-up to the ARM information from Dave Vint last week is the rumour that Sanyo, who second-source the chip, is to develop it further.

It remains to be seen whether any development will include RISCOS or other Acorn firmware/hardware.

Moving on, I now have a copy of the Preliminary spec on the ARM 3 chip from VLSI, which includes in its description: 'The device contains both a general purpose CPU and a full cache memory subsystem in the same package'.

The benefits of this approach, according to the brochure, include the processor clock being decoupled from the memory system, low chip count, small package size and simple design as most time critical functions are carried out internally.

Doesn't this just make you want to buy your own chipset and produce the games machine Acorn can't get interested in?

GOOD COMPANION

Software Solutions has a useful set of Arc utilities in its *RISCOS Companion Volume 1*. These include a suite of file conversion utilities to take files to and from *View*, *1st Word Plus*, *WordWise*, *!Edit* and ASCII.

Also useful are !StartUp, which creates customised startup disks for different applications, !Terminal, which can send and receive text by acting as a terminal emulator and !TheBin, which is an icon-based delete utility.

Fourteen routines are included in the pack, which comes in at the cost of £57.44. For more details contact Software Solutions on 0954 211760.

Bertrum Carrot

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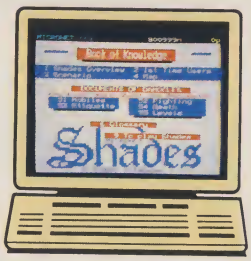
Micronet is also a computer magazine. Our computer news area is updated every day, so there's no better way to stay up-to-date, and our software reviews and features for all popular micros mean Micronet members are always better informed.

Add to this Prestel's massive database and you'll have all the facts at your fingertips.



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But Micronet is not just informative, it's also a lot of fun! As a member you'll have access to a range of games, including the UK's most popular multi-user game, Shades, where the action is live and so are your opponents!

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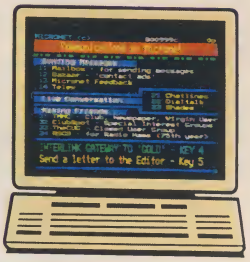
You can look up a local telephone number once on-line.



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THE SHOPPING EXPRESS BUYER'S GUIDE TO MONITORS, SCANNERS JOYSTICKS AND MICE

No computer is complete, there are always peripherals to add to make it just that bit more useable. Joysticks and mice offer control over the micro, scanners allow you to grab images for your documents and monitors let you see what's happening more clearly. For the best buys, read on...

JOYSTICKS

Joysticks, mice and trackerballs are the most common peripherals to be connected to any computer, and now come in all shapes and sizes. The vast majority of joysticks can be connected to any machine and are divided into two categories: hand-held and traditional arcade style. Increasingly the hand-held type are taking over as the most popular sticks.

■ KONIX NAVIGATOR

FROM Konix: 0495 350101
PRICE: £14.99

A hand-held joystick that has become one of the market leaders recently. It's been well designed to fit snugly in your hand and has a standard auto-fire feature. The design is such that it can be used by both left and right handed owners without difficulty.

▲ Excellent design
▲ Single fire button located on the handle
▲ Auto-fire
▲ Comfortable...

▼ But not to everyone

■ POWERPLAY CRUISER

FROM Powerplay: 0457 876601
PRICE £12.99

Great streamline shape with very sturdy design. Powerplay claims to have the lowest return rate of all the joystick manufacturers. A clever ring on the base of the stick makes it possible to vary the flexibility of the grip.

▲ Suckers let you bolt it onto desk
▲ Two fire buttons
▲ Unusual design and colour scheme
▲ Sensitivity control

▼ Unwieldy

■ COMPETITION PRO 5000

FROM Dynamics: 061 4290981
PRICE £15.95

A standard arcade stick with a difference – it's been designed in clear plastic so that all the inner workings can be seen. Very sturdy design which stands a lot of hammering.

▲ Trendy clear-plastic design
▲ Two fire buttons located on the base
▲ Robust

▼ Can't be mounted on desktop

■ TAC 50

FROM Suncom: 0666 504326
PRICE £13.99

Standard arcade-style stick. Includes microswitches that make a loud click when movement occurs. Grey colour scheme. Too flimsy for many games.

▲ Includes microswitches

▼ Noisy
▼ Stick wobbles around too much
▼ Looks very unadventurous

■ MICROLEISURE STARCRUISER

FROM Microleisure:
PRICE £18.95

Lots of extra features including a switch to change the direction of control – pushing forwards can be interpreted as pushing backwards.

▲ Two fire buttons
▲ Lots of features

▼ Bulky and unattractive design
▼ Expensive

■ QS-113 DELUXE

FOR PC compatibles only
FROM Datel: 0782 744707
PRICE £29.99

Features allow this stick to be set in either auto-centering or free-floating mode. X and Y axis can be trimmed using added switches. An expansion card is included for connection to IBM PC-XT/AT. Two 15-way D-type game ports and an on-line 3-position selectable clock speed are included.

▲ Suction pads
▲ Auto-fire
▲ Reasonably cheap for a PC stick

▼ Clumsy design

MICE

Mice are more machine-specific with each mouse being designed to be connected to a specific machine. Trackerballs are like up-turned mice; instead of rolling the ball over a flat surface, its ball is rolled by hand.

■ SERIES 9 MOUSE

FOR: PC compatibles
FROM Logitech: 0925 413501
PRICE £91

This smooth-looking ergonomically designed mouse is one of the most popular of Logitech's design. They are claiming that some 3.5 million units have been sold worldwide. Software comes bundled.

▲ Fits easily into the hand
▲ Very good control
▲ Good looker

■ MICROSOFT MOUSE

FOR PC compatibles
FROM Microsoft: 0734 500741

Microsoft aren't exactly best known for their mice, but this one is another mega seller. It's been well designed to fit comfortably in the hand and glides across surface tops.

▲ Robust
▲ Functional
▲ Good bundled software

▼ Archaic design

■ TURBO MOUSE 2

FOR PC compatibles
FROM NTS

Instead of a roller-ball this mouse uses photo-electric cells to detect movement. Unfortunately this means that it can only be used on a special mouse mat and, due to the felt-pads underneath, it runs stiffly across this.

▲ Looks very high-tech

▼ Awkward to hold
▼ Mouse buttons are badly positioned

■ PC MOUSE II

FOR PC Compatibles
FROM Mouse Systems Corporation: 0256 461744

This brand-new design is claimed to be Mouse Systems' most advanced yet. It's another photo-electric cell design which has the advantage that there are no moving parts to get dirty or wear out. Dynamic acceleration gives it tight cursor control. Comes with its own mouse pad.

▲ User determined resolution from 20 to 6400 CPI
▲ Fits well into the hand
▲ Stylish

■ REPLACEMENT MOUSE

FOR PC and Amiga
FROM Datel: 0782 744707
PRICE: £29.99

This standard rubber coated-ball

➤

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Mannesman MT 81 Dot Matrix.....£115
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Mannesman Serial Interface £49

REPAIRS FOR AMIGA AND ATARI

mouse is intended to replace Amiga or 1512/1640 PC mice. It sits on Teflon guides for very smooth movement and has an optical system counting of 500mm.

▲ Cheap

▼ Very poor design
▼ Difficult to use mouse buttons

■ KEMPSTON MOUSE

FOR ST
FROM Kempston Data: 0234 841224
PRICE: £29.99

There aren't many replacement mice for the ST, but this is one of the best. Small and compact, it fits easily into the hand and can be used on a very small area. There is a noticeable difference from the standard ST mouse.

▲ Good design
▲ Only small work area required
▲ Long-lead

▼ Cheap looking

■ TRACKERBALL

FOR ST
FROM Third Coast: 0257 424442
PRICE £24.99

The Trackerball is brilliant for playing *Marble Madness* but it's not really a lot of use for much else. The unit is big and cumbersome but you don't need the sort of space which a mouse requires so things aren't all bad.

▲ Good control
▲ Sturdy design
▲ Reasonably cheap

▼ Few games play well with it

SCANNERS

With a scanners you can grab an image from a page and import it as a graphic file into your computer. Three different types exist: handheld, flatbed and printer scanners. The hand-held scanner is the most popular and is dragged by hand over an image. The problem with these is that only a narrow width can be scanned. Printer scanners fit onto the head of a printer and scan an image by forcing the print head back and forth across the picture. The quality isn't particularly good, but then they're usually cheap. Flat-bed scanners are the most reliable and most expensive. The image is scanned by passing a scanning head over the flat picture.

■ PROSCANLAB

FOR Amiga 2000
FROM ASDG: 0923 818079
PRICE £3900

This is currently the only colour scanner available for the Amiga and is a highly professional flat-bed design. Variable resolution from 30 to 300 DPI is possible. Scanning can be in one, three, eight or 24-bit mode with real-time scrolling over large images. Colour correction is possible with independent control over red, green and blue levels. Edges can be emphasised or smoothed. The four-colour separations possible are some of the best seen on a home micro.

▲ Only system to offer colour system on the Amiga
▲ Postscript compatible
▲ Software reads and writes images in any Amiga format
▲ Variable scan resolution

▼ Very expensive

■ GENISCAN GS4500

FOR Amiga and ST
FROM Datel: 0782 744707
PRICE £189.99

A hand scanner with 105mm width and 400dpi resolution. Adjustable switches let you alter the brightness and contrast of a scanned image to obtain the best results. Good software, which offers features to cut and paste selected areas of the image, is included in the price.

▲ Good results
▲ Software saves images in a variety of formats
▲ 400dpi

▼ Clumsy design

■ DAATASCAN

FOR ST
FROM Kempston Data: 0908 677886
PRICE £150

Another hand scanner with a 105mm scan strip. Kempston has just released new software to accompany the scanner. Besides the usual cut and paste features, there are options allowing you to scan over the top of other images. 200 dpi resolution is limiting even though four grey-scale options are available.

▲ Easy to use
▲ Cheap

▼ Only 200 dpi
▼ Roller can slip giving uneven images

■ CAMERON HANDY SCANNER

FOR ST & Amiga
FROM Cameron: 01-449 9192
PRICE From £199.89

The compact design is ideal, but sadly only 64mm wide strips can be scanned. Three types of grey scale are possible. Optical character reading software is bundled with the machine. This interprets text scanned into memory and translates it into ASCII characters. Cameron offers a wide range of scanners in several sizes including an A4 flatbed scanner.

▲ Good quality output
▲ Small width
▲ 200 and 300dpi resolutions

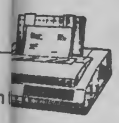
▼ 64mm scan width
▼ Hard to install

■ HS3000

FOR PC compatibles
FROM Ajwad: 01-788 1982
PRICE £215

The HS300 is much cheaper than other PC hand-held scanners and comes with the excellent Halo DPE editor. The software works in resolutions up to ➤

ULTIMATE BUSINESS MACHINES



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PC1512DD	438	514	
PC1512HD	559	636	
PC1640SD	458	544	628
PC1640DD	518	597	682
PC1640HD	688	778	858

SOFT-INC MON	COL	12"	14"
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PC2086DD	598	679	768 849
PC2086HD	765	851	936 1021

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All PCS have VGA Monitors

COMMODORE

NEW RANGE

MODEL	MON	COL	VGA	VGA
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PC20HD	699	829	726	964

AT80286

PC30HD	1022	1167
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PC50HD	Call	Call
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XT-HD20	599	749	899	959
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PC/XT				
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3001 DD	549	699	869	969
3001 HD20	679	829	999	1099
3001 HD30	699	849	1019	1119

AT80286 10Mhz 640K RAM

6001 SD	879	1029	1199	1299
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6001HD20	1079	1229	1399	1599
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6512 SD	1099	1249
6512 DD	1169	1319
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S800DD	1699	1859 1899

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LC24-15	200/67	* 324
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XB24-15	240/80	* 495
LASER PRINTERS		
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MODEL	SPEED	PRICE
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KXP1180	192/36	* 149
KXP1592	216/45	* 254
KXP1595	288/65	* 314
24 PIN DOT MATRIX		
KXP1124	192/63	* 225
KXP1540	288/65	* 405
LASER PRINTERS		
KXP4450	11PPM	*1169

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KXP1180	5.80	70
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KXP1595	5.80	161
KXP1124	5.80	80
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CITIZEN

MODEL	SPEED	PRICE
9 PIN DOT MATRIX		
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120D SER	120/25	* 124
120D COM	120/25	* 139
180E PAR	173/30	* 128
180E SER	173/30	* 154
PRODOT 9		* 279
SWIFT 24 PIN	160/60	* 245

MANNESMAN

MT81	120/25	* 104

HYUNDAI

HY910 10"	216/37	* 135
HY920 15"	216/37	* 199

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MODEL	PRICE
THINKJET	* 254
QUITEJET	* 334
QUITEJET +	* 398
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DESKJET +	* 519
PAINTJET	* 644
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MODEL	SPEED	PRICE
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Floor standing A4/A1 4 pen plotter, HP7580B compatable
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300dpi, although the scanner can simulate 400dpi.

▲ Cheap
▲ Good bundled software
▲ Pseudo 400dpi mode

▼ Feels tacky

■ HANDY SCANNER 4

FOR PC compatibles
FROM Cameron: 01-449 9192
PRICE £290

A sturdy hand-held model which fits neatly into the palm of the hand. Some very useful optical character recognition software (OCR) is bundled. The scan head isn't very large, but the software enable you to scan a large image in strips and join the bits together.

▲ Proper 400dpi scanning
▲ Good software
▲ OCR utilities bundled
▲ Comfortable to use

▼ Small scan head

■ SCANMAN

FOR PC compatibles
FROM Logi UK: 0925 413501
PRICE £229

The ScanMan hand-held looks good and is reasonably priced. The 400dpi scanning mode offered is simulated and the software can scan images directly into Microsoft *Windows* or its own *ScanPaint* utility.

▲ Reasonably cheap
▲ Nice looking number
▲ Scanning can take place in Windows

▼ Not true 400dpi scanning

■ MSF300Q

FOR PC compatibles
FROM Aptec: 01-627 1000
PRICE £1552

Aptec's flatbed scanner, manufactured by Microteck, can support up to 64 grey levels and includes graphics software for halftone and line-art applications. Expensive but then the 300dpi scans are quite something.

▲ Excellent 300dpi scans
▲ 64 grey-level scans
▲ Good software

▼ Expensive...
▼ And doesn't offer 400dpi scanning

■ SP-MH216AF

FOR PC compatibles
FROM Mitsubishi: 07072 76100
PRICE £689

Mitsubishi's offering is an interesting mix of the benefits (?) of hand-held and flatbed scanners. A sheet of paper (up to A4 in size) is fed through automatically, but must be guided by hand. It's not as good as a true flatbed – but for almost half the price you can't really complain.

▲ Cheap alternative to flatbed
▲ Takes A4 sheets

▼ Only 200dpi resolution

■ FX-RS505

FOR PC compatibles
FROM Panasonic: 0753 73181
PRICE £1374

Scanning at up to 400dpi is possible in 16 shades of grey. Its top resolution will become more useful as 400dpi laser printers appear. Panasonic's own scanning software, *Panscan*, is supplied.

▲ Good 400dpi scans
▲ Cheaper than 300dpi scanners
▲ Solid design

▼ Only 16 grey scales available at higher resolutions

MONITORS

There are many monitors to choose from – most offer the same thing in a different box. The majority of monitors tend to work with PCs only, however, there are various others that are suitable for connection to Spectrums, C64s, STs, Amigas and all the other home machines. There are monitors for specialist applications: large paper-white monitors for DTP, high resolution colour monitors for graphic work, compact LCD screens for portability. One of the major problems with hooking up monitors is finding the right leads. Lightwave Leisure on 051 6305003 specialises in producing leads for connecting monitors to almost any type of machine.

■ PRO 8CM852

FOR Amiga, C64, Spectrum, ST
FROM Philips: 01-689 2166
Price £299

A single scan-rate monitor similar to the Commodore 1084, but in a different case and with many of the esoteric functions moved from the front panel to the rear. The screen is etched rather than having the anti-glare coating of the 1084 – this gives reduced reflection from external light sources.

▲ SCART and composite input
▲ Excellent stable picture quality
▲ Good contrast and brightness controls

▼ Mono sound input and output

■ QUADRAM MS1420

FOR All machines
FROM SDL : 01-309 1111
PRICE £399

A multisync monitor that can cope with PC CGA and EGA modes, ST mono and colour modes and virtually all other home computer graphics modes. It's big and comes with a swivel stand. Numerous dip-switches at the back of the monitor allow you to make colour selection and choose the type of video input.

▲ Professional looking
▲ Solidly built
▲ Good picture
▲ Works with numerous machines

▼ Documentation is poor

➤

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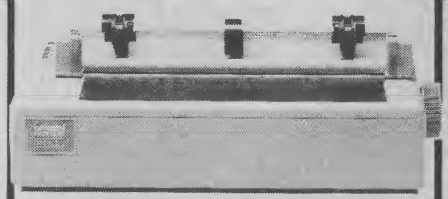

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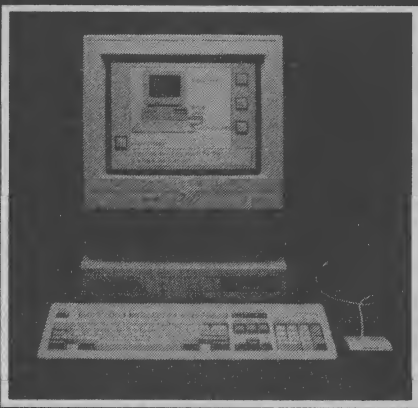

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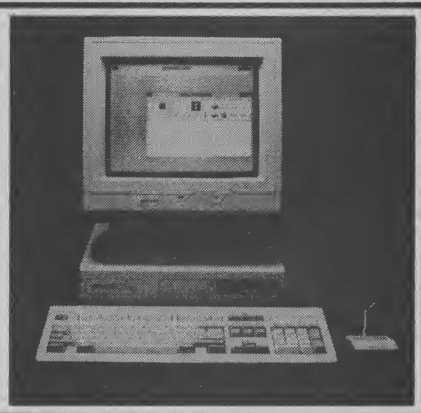

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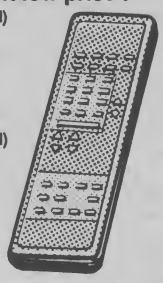

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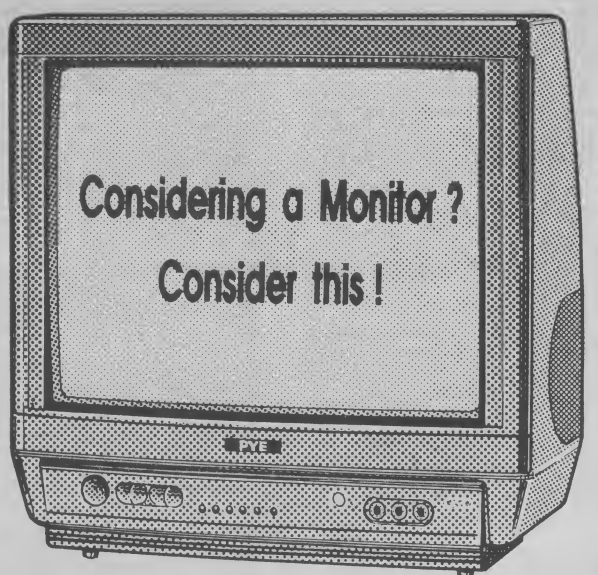

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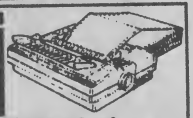

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CARDIFF Atari ST/STE club. Please send large S.A.E. to James Provoost, 254 Cyncoed Road, Cyncoed, Cardiff, CF2 6RT.

SPECTRUM +3 owners! Join +3D - The +3 user club. S.A.E. to Gary Stimson, 4 Fox Covert Drive, Roade, Northants, NN7 2LL for details.

64 (Tape) not disk – users club about to start up – going global soon. Trade, Demos, comps: For details S.A.E. to: D. Mason, Ethorpe Hotel, Gerrards Cross, Bucks, SL9 8HY.

ADVENTURE enthusiast seeks contacts to exchange ideas etc for ST and PC games. Mr S Lucas, 47 Longcroft Lane, Cheadle Hulme, Cheshire.

AMIGA Contacts wanted to start FREE beginners club in the south to swap games, cheats, tips etc. Please contact David after school on 0425 279835.

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AMIGA newcomer, contacts wanted, usual stuff – swap games, tips etc. Where do I get cheap disks? Write to Kev: 20 Cypress Avenue, Ellesmere Port, Cheshire LG6 2UU.

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LAMER? Want to swap software, tips, demos and form a Lamers against Lamers Society? Then contact, Faisal Patel, 73 Track Road, Batley, W. Yorks, WF17 7AB.

LIST the low income ST User Group for students and the unemployed send two blank disks to Marcus, 9 Days Green, Chapel Street Mary, Ipswich, Suffolk IP9 2HZ for details.

NINTENDO contacts wanted for swaps and setting up of User Group! Write to: Ashley Middleton, Amberley, Park Drive, Little Aston Park, Sutton Coldfield, B74 27A, 100% reply.

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ST contacts wanted if into Agtomation or any other, then write or phone 110% reply, almost. Lee Edwards, 24 Toplan Road, Glan Conwy Clwyd, LL28 5NP tel: 0492 580447.

ST user: Help!, I'm Australian and have just bought an ST (used to own a C64 in Oz) Anyway, I am looking for good contacts and also anyone in Bradford interested in starting a users group. Contact David Marshall, 5 Highfield Road, Five Lane Ends, Bradford, W.Yorks.

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AMIGA contacts wanted to swap the latest stuff 100 per cent fast reply. Send lists to Grant, 56B, Amherst Road, Bexhill, East Sussex, TN40 1QW.

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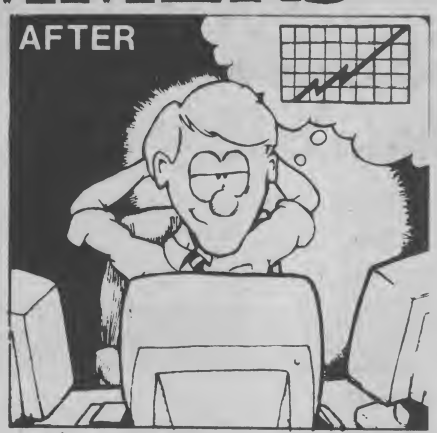

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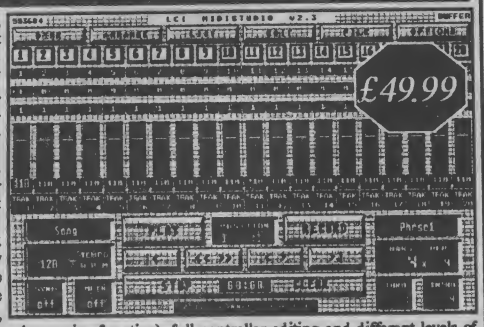

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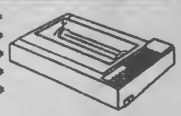

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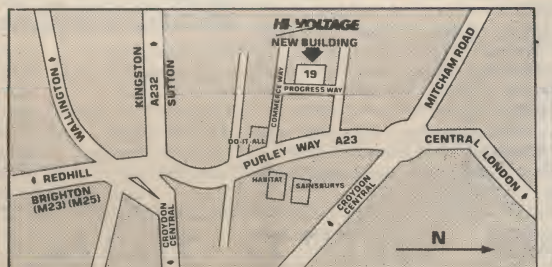

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Over the past 30 or so years computers have revolutionised society. The machines themselves have undergone enormous transformations, particularly in size: the desktop computer has been with us for many years; the portable computer is a reality; and the pocket computer is knocking at the door. The main obstacle to be overcome now is not technology, but cost. However, one feature of the computer has changed but little – the keyboard. In fact, the 'QWERTY' board is essentially the same now as when it was invented by Scholes in 1872.

The QWERTY layout works and, for most people, works well, though it does have two significant drawbacks: it is not designed for optimum efficiency and, more seriously for professionals, it carries the risk of repetitive strain injury.

WHY QWERTY?

The QWERTY layout was designed specifically to overcome the mechanical limitations of 19th Century technology. If two letters were struck in quick succession, the type bars jammed. To overcome this it was necessary to spread the commonly-used letters around so that a slight delay allowed the withdrawal of the previously struck key.

As 'e' is easily the most frequently used letter of the alphabet it should, in a logical keyboard, be a home key. On the standard keyboard, however, it is pushed up to the top row and only three of the ten most used letters are located under the rest position of the fingers. These keyboards, together with visual displays, have highlighted another problem – operator stress, known generally as repetitive strain injury (RSI).

WHAT IS RSI?

Repetitive strain injury is caused by the over-use of certain muscle groups and, far from being confined to keyboard operators, manifests itself in many different professions. Tennis elbow and writer's cramp are two well-known examples.

For keyboard users the problem arises because of the unnatural stretching involved in the operation of the standard keyboard.

Stand up straight and relax your arms; you will notice fingers curl inwards slightly. This is the natural rest position of the human hand, so a keyboard designed to fit this would, in theory, eliminate repetitive strain injury completely.

The first person to recognise this appears to have been Lillian Malt, a skills analyst who has trained thousands of keyboard operators over the past 25 years. When she first approached 'the electronics boys' (as she calls them) she was rebuffed with a 'can't be done' response. In 1976 she met Stephen Hobday, whom she describes as an electronics wizard. Hobday shrugged off his contemporaries' defeatist attitude and produced a keyboard designed to her specifications.

• *The one-handed keyboard: a boon to disabled users.*

MALTRON DESIGN

The Maltron Ergonomic Keyboard was layout follows the contours of the resting hand and makes allowance for the fact that our fingers are different lengths. The wrists can be held quite straight, palm resting pads in front of each finger group allow the operator to pause without losing position, and the centrally located numbers are easily accessible to suit both right- and left-handed operators. The keyboard facilitates greater accuracy because, as Lillian Malt points out, it is easy to tell where your fingers are, because of the feel.

The keyboard design is the result of an analysis done at Brown University in Rhode Island, USA. A million words were fed through a computer to determine the frequency of letters, and of two- and three-letter sequences. The improved layout also increased operator speed. On a standard keyboard one operator in 200 will be able to achieve 120 words per minute; using Maltron a staggering 30 per cent of all operators can reach this speed.

Old habits die hard, so the current Maltron keyboard (Mk IV) is colour-coded and can be used as a QWERTY model. On average it takes less than a day to re-train a QWERTY operator on the Maltron keyboard, but some people can get used to it in half an hour. A 20 per cent increase in speed is frequently achieved. Obviously, it takes longer to learn the new layout, but Lillian Malt claims that Maltron can be mastered in a third of the time it takes to learn QWERTY.

A number of specialist keyboards for disabled people are also available. Madelaine Davenport, a Grantham woman who was born without a left hand, boosted her 40 words per minute to 70 when she changed over.

COLD SHOULDERED

Only some 300 individuals and companies world-wide have gone over to it, in spite of its being compatible with IBM, BBC, Apple, Wordplex and other models. Because of this small scale production the prices are quite high. The average keyboard sells for £339.

Though they would undoubtedly welcome commercial success, Lillian Malt and the Hobdays are motivated by more altruistic motives. Of RSI Stephen Hobday says: "I am totally appalled at the damage it does cause to women who really get RSI badly – it's appalling to see the crippled state they get into." ■

THE BLACK ART OF

Getting your PC to talk to another is one of the trickiest parts of computing. Mike Hardaker plugs his modem into the serial port and gets communicating

All areas of computing are pretty bewildering to the novice, but one alone has a reputation for flummoxing the expert: communications. Even to seasoned data processing professionals, comms (as it is known to the *cognoscenti*) is perceived as a black art. The reason for this is simple: comms *is* a black art. It shouldn't be, but it is.

Communications is a blanket term used to describe the process of getting information from one computer to another computer. It is split into two main areas – local area networks (LANs) and wide area networks (WANs). To confuse matters, WANs are often described simply with the term 'communications' while LANs are described as 'networks'.

The principles involved in LANs and WANs are the same: it is the geography which differs. In crude terms, a LAN is a collection of computers attached by bits of wire and located in one office or building. A WAN, on the other hand, links computers in disparate locations, usually via a telephone line. Around the home, the electricity ring main is a LAN, while your telephone is attached to a WAN.

WHO NEEDS THEM?

The most straightforward use for a LAN is peripheral sharing. If you have two PCs in an office but only one printer, it can be a bit of a pain having to move the printer from one desk to another every time someone wants to print something out. A LAN allows one computer to use another computer's printer. Also, disks on a 'remote' PC can be accessed – so you may be able to get away with only one hard-disk-based PC, which acts as the filing cabinet for a floppy-based system on the network. A computer which provides printing for a network is called a print server, while one which acts as a data store is called a file server. The PC which uses the server's facilities is called a client.

Multi-user software is also available, specially designed for LANs. This allows, for example, two bookkeepers to look at the same file simultaneously. It is particularly handy for the traditional business processes of stock control, order processing and the like.

Wide area communications allow data stored in one location to be accessible instantly to a computer in another location. So a salesman based in Leeds, with a head office in London, could instantly check on the inventory lists kept on the main computer – thus giving the customers up-to-date information on delivery times.

SECURITY

If you give people access to your data, there is always the risk that they will help themselves to information you'd like to keep private. Therefore, any network must have a way of making certain elements of information secure. When buying any network hardware or software, make sure you can keep those letters to the bank manager away from prying eyes.

Alternatively, you could use the heavyweight processing of a mainframe in another city, while still seeing the results of any calculations in real time on your PC.

Wide area comms also has recreational uses, with 'bulletin boards' available all over the country. These act as central repositories for shareware and public domain programs, and provide conferencing facilities for on-line debating of anything from PCs to cricket.

LANs

Local area networks are described in a number of ways. The first is the 'topology'. This is the term used to describe the shape of the network, if it were to be drawn in a schematic way.

The simplest network topology is the 'bus' network. In a bus network, the 'nodes' (the elements of the network – PCs in our case) are connected in a straight line. Although this is simple, it tends to be the most vulnerable to 'contention' – when two or more nodes want to do something at once. The best-known bus network is called Ethernet.

Another type of network is the 'ring' network. In

RING NETWORK **STAR NETWORK**

Network topography is an important consideration for anyone involved in setting up a local area network. Ring networks pass the data from one computer to the next, commonly a token is transmitted which tells the recipient machine that it has the network to itself and it can transmit away. Star networks are less common, because the wiring is more expensive. they require a 'hub' which receives and transmits data to the networked machines. High data transfer rates are possible, but the setting up is more complex. The simplest and commonest kind of network is the bus network. Standards such as Ethernet and MainLAN work on this principle – the computers are simply wired together. However if large numbers of machines are connected up, this kind of network can slow down dramatically.

OF PC COMMUNICATIONS

this, there is a circle of wire with the nodes at various points along it. The most common type of ring network is the token-passing ring or just token ring network. This uses a 'token' which passes at very high speed around the ring and informs nodes when they may send or receive data. It's rather like electronic pass-the-parcel.

Also seen are 'star' networks. These have all the nodes attached separately to a central 'bridge' which arbitrates requests to use the network.

After topology, the next way networks are described is at the manufacturer-specific hardware level. Both 3-Com and Sage sell bus networks, but they are not compatible with one another at a hardware level – just as both the Commodore Amiga and Atari ST are 16-bit micros, but not compatible.

After hardware comes software. Any network has an operating system, just like any PC. The PC has standardised on MS-DOS as its operating system, but the LAN world is somewhat more fragmented. Assuming your network operating system can cope with any expected growth you will have, it shouldn't matter which one you chose. Above all, however, it must be NETBIOS-compatible – this is the network equivalent of a PC being IBM-compatible and ensures that network software will run on your LAN.

At the cheaper end of the market, Amstrad's network and Sage's MainLan have good reputations. These combine the hardware (a card that fits into a expansion slot) and software you need in one package.

Networks operate at different speeds, with quicker generally signifying better. However, if you only have two PCs on a LAN, it does not have to be that quick. If you have 100, you'll need a very fast LAN to prevent most PCs being in a constant state of waiting.

WANs

Big companies have vastly complex networks which often cover the globe. The rest of us mortals, however, are involved in two main types of long-distance comms – from PC to PC and from PC to bulletin board (BB) or on-line information service.

Both involve much the same principles. You need a modem and comms software – and a telephone. Comms software comes in many flavours, but tends to use a certain set of 'protocols'. These are the standards of the comms world and ensure that both ends of the electronic conversation are speaking the same 'language'. Just as a Parisian and a Londoner can only communicate if they agree on a common language, two computers can only 'talk' of they share protocols.

One of the simplest standards in the comms world is known as Kermit (and yes, it is named after the frog). In fact, Kermit is the name of a comms package which is in the public domain. Therefore it has two great advantages – it is nearly universal and it is free.

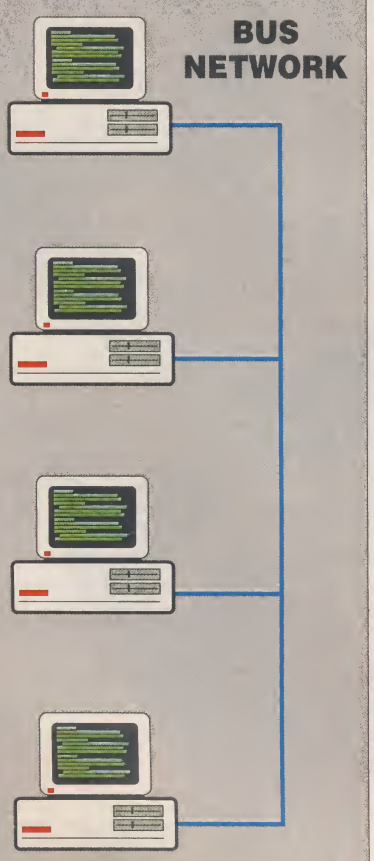
Commercially-available comms packages include *Crosstalk* (which was the standard until a few years ago) and *Mirror* (the current standard, which started off as a *Crosstalk* clone). These packages support the Kermit protocol, as well as more recent and more sophisticated file-transfer protocols such as X-modem and Y-modem.

Most comms software that you can buy works. The problem is getting it to work. Since comms has traditionally been an area for the technically adept, many comms programs are fiendishly difficult to use. Therefore, it is essential that any documentation is easy to understand – ask to see the manuals before you buy a program.

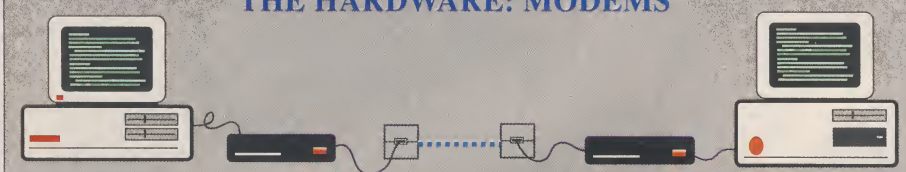
Kermit and X-modem are file-transfer protocols, designed to help you copy a load of data from a remote computer to your own. Very often, you merely need to look at the data on a distant machine. In these circumstances, it is the lower-level hardware protocols which count. Any comms package worth its salt will handle all the main ones, but you have to know what the remote machine is expecting.

These hardware protocols include the speed of transmission (in bits per second) and the arcane-sounding parity, stop bits and data bits. You don't have to worry whether your kit can change these – all the stuff on the market today can.

If you want your PC to emulate the 'dumb' screen of a mainframe – handy for some on-line databases – it need 'terminal emulation' software. The most common is VT-100, make sure your software supports this. ■



THE HARDWARE: MODEMS



The hardware device which allows you to talk to a computer over the telephone lines is called a modem. This is an abbreviation for MOdulator/DEModulator. Essentially, a modem attached to your PC converts the PC's data into a form which can be sent down the phone. Another modem at the other end converts that information back into a computer-readable form.

There are two main types of PC modem – internal and external. Internal modems fit into a slot in the PC's expansion chassis, so take up no desk space. External modems are typically the size of a book, and attach to the serial port of the computer.

Modems come in various speeds, rated in bits per second (describing how many binary 1s or 0s they send in a second). These days, 1,200BPS is the low-price standard with 2,400 becoming increasingly common. Of the lower-priced modems, the Amstrad MC2400 is one of the best.

There are modem standards, of which the main one is Hayes-compatibility. The Hayes company in the States makes top-quality modems at a price, but modems which are compatible with them are available at sensible prices. Hayes compatibility is definitely a Nice To Have feature.

Error-correction is also a comms issue. Since the telephone lines offer an imperfect vehicle for transmission, it is possible to end up with gobbledygook appearing on a remote screen. Hardware error-correction fixes most of this, with the standard to look for being MNP level 5. Some software also offers error-correction. If your modem does not, make sure your program does.

ALL IN ALL

If you need to shuffle a lot of data around in a hurry, communications could turn out to be your best friend. On the other hand, it costs money so you should ask yourself whether you really need it.

The simplest form of LAN is simply copying a file to a floppy disk and giving it to the person at the next desk.

This works well and is totally free, but if you're involved with shifting a great deal of information, it can be somewhat impractical.

Equally, if you need to get computer data from Leeds to London, the post works fine. It's only if you're in a real hurry that comms starts to pay for itself. It is for the time-critical elements that communications can be so useful – getting at 'live' stock market data, for example. Also, because it's so weird and complex, you may actually find it fun.

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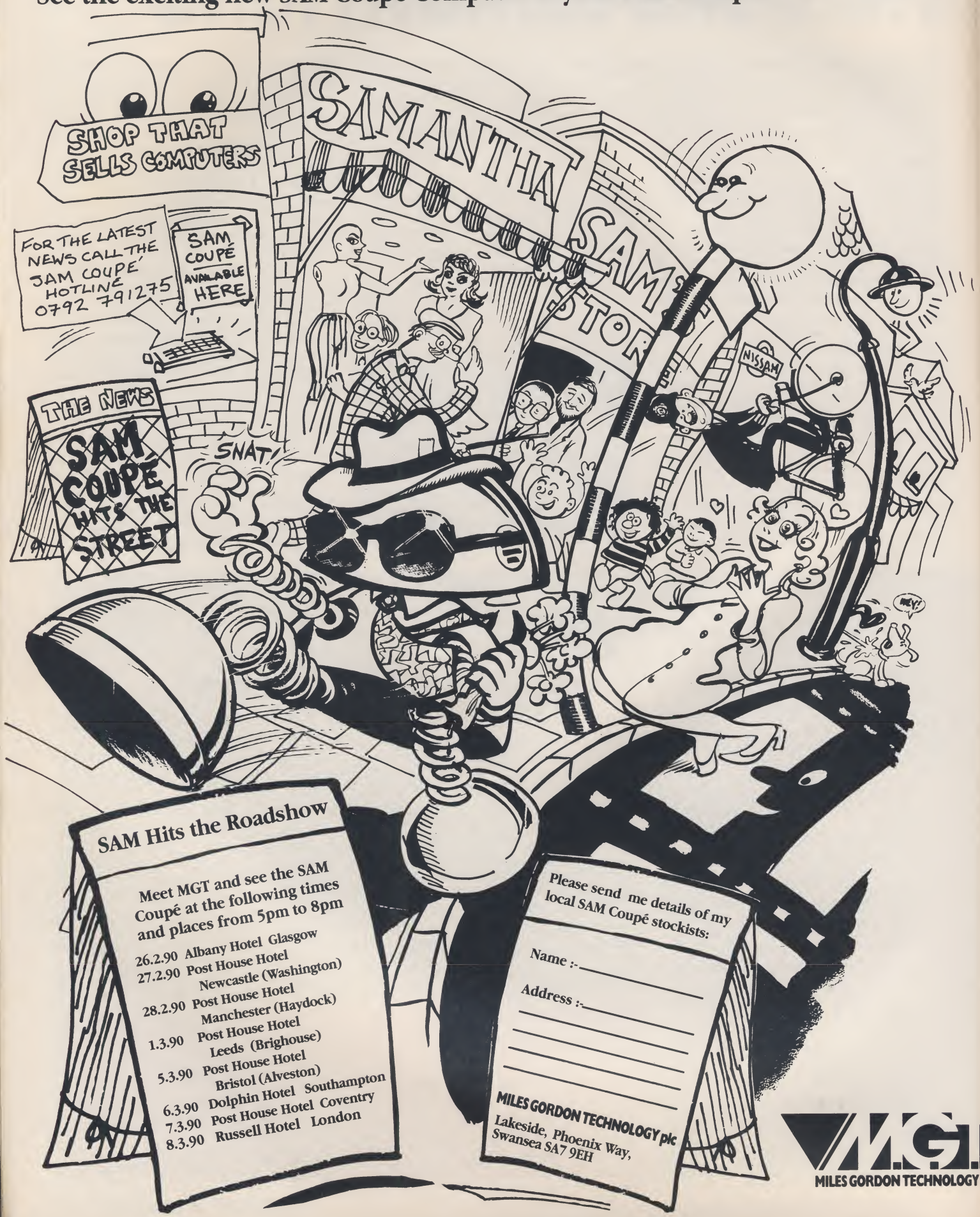

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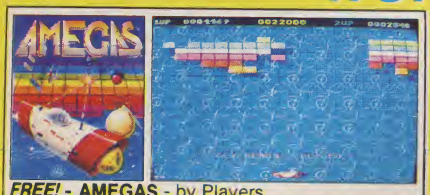

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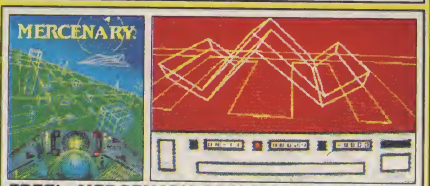

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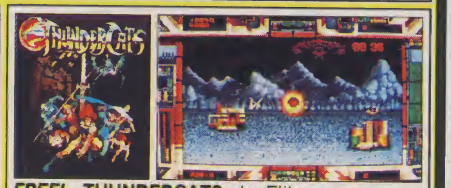

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Do you already own a computer
If so, which one do you own?

SWAP SHOP

If you've owned a computer for a few years now, and think it's about time you upgraded to a more powerful machine, you won't want to leave all your work behind. Andy Storer makes the connections...

While perhaps not as fraught as moving home, the thought of moving machines can be quite trying. For if you use your computer for anything more than playing games, it's likely you will have files and files of old letters, database records, maybe dozens of useful little BASIC routines tucked away in there.

So what are you going to do? Junk them and start all over again? No, the path to your new dream machine need not mean your old one has to be consigned to the great wastebasket in the sky. With a little effort you can transfer textual data between machines.

But it's not just the upgraders among you who might want to transfer files between machines. If you are working together on a project, you might just want to exchange text or code files with friends who have different machines. Or you might have a machine at work that is different from your own and want to be able to continue working at home.

INTO ASCII

Whatever the reason for transferring files, you'll first need to make sure the data is in ASCII text format. ASCII, the American Standard Code for Information Interchange, is a 8-bit code which facilitates the transfer of data between computers and peripherals. It comprises an set of 255 codes, including upper- and lower-case letters, punctuation, form and line feeds.

Most word processor include options to save in ASCII format, but not all strictly conform to the same standard. For instance, some treat the end of a line as a hard return – in effect each new line becomes the beginning of a new paragraph – so a little trial and error is recommended. Although such idiosyncrasies can be a pain, what you need to do is load the ASCII file into a word processor on the receiving machine and use the Search and Replace function to strip out all the hard return codes.

WAYS AND MEANS

There are four ways of exporting and importing ASCII files between machines.

1. The easiest way to transfer ASCII files is via a modem accessing a bulletin board. Here you simply upload your data through a comms package to the board and download to the receiving machine. The BB's software will take care of the exchange, but this method obviously relies on ownership of a modem, and even then is best suited to exchanging data between remote machines.

2. Another expensive option, and more hassle, is to track down a local data transfer bureau. There you can transfer files between hundreds of different formats for a fixed price, but the data will need to be on floppy disk rather than tape.

3. Some machines, notably the ST and MSX, can directly read and write to IBM format disks. Others, such as the Amiga, can have their drives configured through software to do the same.

4. The easiest, cheapest and simplest way of doing the job though is by linking two machines together via an RS232 lead and using communications software to send and receive the ASCII data. Most machines have an RS232 interface built-in, and if not such an interface can be bought off-the-shelf for all the remaining ones. Basically, an RS232 port sets a protocol to allow serial communication between two devices – usually a computer and a modem. So all you are doing when transferring data is fooling the host computer into thinking the receiving machine is a modem. Meanwhile, the receiving machine processes incoming data as if the host computer is a keyboard. So all you need to be able to make the connection is some software at both ends to take care of data transmission.

MAKING THE CONNECTIONS

To use this guide all you have to do is locate the two computers you wish to transfer data between and note the software each needs to use. Once both are up and running and the lead is connected it's simply a question of entering a transmit command and, hopefully, you're away. The software quoted will, no doubt, not be the only package available to do the job – we canvassed a range of informed sources for the cheapest, no frills, packages available. If you know of anything better then let us know by post. ■

LEADING QUESTIONS

Obviously the key to successful file exchange is an RS232 lead. These come in two varieties – the kind you use to connect up a modem, and the lead you need to connect two computers. These differ fundamentally in their internal wiring, and if you use the wrong sort *it will not work.*

The lead you need for between-computer transfer is known as a 'null modem' lead. It has the data transmit pin on one end connected to the data receive pin at the other, and vice versa. A lead to connect up a modem has the transmit pin connected to the transmit pin, and the receive pin wired up to the receive pin. In both cases the ground pins of each end are linked together.

The issue is further complicated by the two different shapes of serial port sockets – 9-pin and 25-pin – and the fact that both shapes come in male and female versions. To make your lead, obtain the relevant connectors from Tandy or a mail-order retailer, and wire up the three pins needed – the others can be left unconnected. If you don't feel up to the soldering, your dealer will make up a lead for you if you give them the spec.

MACINTOSH

Red Ryder stands out here as the cheapest and most fully-featured comms package for the Mac that will cater for serial lead data transmission. What's more it's shareware. If you specifically want to read and write PC format then there is also the useful *Apple File Exchange* utility for Macs with 1.44Mb drives, which is provided free.

ST

There are several software packages for the ST which will transfer files using any of the proprietary protocols, such as X-modem or Kermit, via the machine's serial port. The cheapest is *Uniterm* from Softville PD on 0705 266509. If you want to exchange data with a PC then the easiest thing is to swap 3.5-inch disks between the two machines. As long as the disk has been formatted on the PC, both machines will be able to read and write it. Public domain PC formatters are also readily available for the ST, which will happily read, write and format PC disks.

C64

First of all you need to get an RS232 interface from Datel on 0782 744707 which will cost you £30. Then you will run into problems since comms software for the C64 isn't exactly thick on the ground, but the C64 users group on 01-346 0050 will be able to help you out. Alternatively you could try and track down a piece of software called *Big Blue Reader* that used to be distributed by Audiogenic on 01-861 1166

SPECTRUM

As Britain's biggest-ever selling home micro you would expect there to be stacks of terminal software for the old Speccy, but you'd be wrong. A modem would appear to be the only means of transferring data to and from your machine, and even then you need to buy a separate RS232 interface. Your best bet for RS232 lead transfer might be to contact your local user group or specialist store for help. There are comms programs available but unfortunately most of them seem to be on bulletin boards – which you need comms software to access. A neat and infuriating little Catch 22.

PCW

Dialup from PMS Communications (on 021-643 7688) is the best comms package for the PCW, though it might be a little steep at £70 for file transfer alone – it's really intended for modem use. A neat PD comms package from Advantage on 0242 224340 is the cheapest alternative, though you will have to fork out £60 for an add-on RS232 interface whatever way you wish to proceed.

ARCHIMEDES

Transfer of files is perhaps best handled through a serial link. Comms packages on the Arc which handle machine-to-machine transfers include *ArcComm* from Technomatic on 01-205 9558 for £30, which is the best one to go for. For PC-specific transfers there is Acorn's *PC Emulator* which will allow 720K MS-DOS disks to be freely transferred from PC to Arc and back. Two utilities are also supplied with the emulator to transfer files from MS-DOS to RiscOS. `GETFILE.EXE` and `PUTFILE.EXE` get and put RiscOS files into MS-DOS format.

Without *PC Emulator*, there is the *!PCdir* utility from Norwich Computer Services which does much the same as *Getfile* and *Putfile*, but works from RiscOS.

BBC

If you have a Master 128 then you have no problems since it has a built-in terminal emulator and RS232 interface. If, however, you have a BBC B then you'll need to invest in the *Termulator* ROM from AcornSoft (on 0223 214411) for £34.50. If you specifically want to transfer between BBC and PC format then MicroBoss on 0255 671095 offers a complete transfer service. It also markets *BeebDos* – a £46 MS-DOS utility that allows a PC-compatible to directly read and write to BBC disks.

AMSTRAD CPC

First of all you will need to buy an RS232 interface as the CPCs don't come with them fitted as standard. Your best bet is to buy an interface from KDS (on 04583 2076) for £46 which comes complete with terminal emulator software on ROM. Just plug it in, buy a lead from a local computer supplier, and you're away. Alternatively, if you specifically want to transfer files to and from a PC, Siren Software, on 061-228 1831, is expecting to release a software utility for £20 or so which will allow users to read and write directly to MS-DOS disks. The catch here is that you will need a different disk operating system either in RAM or ROM to address the additional 5.25- or 3.5-inch external drive you will need to use. You can buy this in the form of RoDos from Romantic Robot on 01-200 8870 or instead, KDS's ROmDos – both for around £30.

PC

Mirror 2 from Softklone UK on 0628 819200 at £89, is the best fully-featured comms package available though it might be a little expensive for mere file transfer as it is set-up for modem work. However the public domain Kermit utility available from just about all PD libraries would seem to be the best bet for our purposes as it does the job admirably and is, most importantly, free. You can use the MS-DOS `COPY` command to send and receive files directly, but there is no error checking. For further info on the PC end of things watch out for our forthcoming feature in *Express* 70 dedicated to hooking up your PC to other makes of computer.

QL

The QL is probably one of the easiest machines to transfer ASCII files from and to, since its under-rated operating system is capable of directly copying files to its serial port without any controlling software. In the same way, incoming data can be sent straight to the built-in microdrives or RAM. It must be pointed out though that data transfer via these automated methods should be kept down to 1,200 baud for error-free transmission, but if you want fast transfer at 9,600 then *Qualsoft* from TF Services on 01-724 9053 is the one at £30.

MSX

If you're lucky enough to own a Toshiba HX22 then the RS232 interface and software is already built-in, but for the earlier models you will have to buy RS232 cartridges – Computamart's Text + Cards + Communications costs a whopping £199! For tape-based machines with an RS232 interface, Capri Marketing on 0628 891022, does a *Communications* tape for the princely sum of £4.99. If you're trying to exchange data with a PC and you own a MSX 2 then you are lucky enough to have a disk operating system that can read and write to 3.5-inch PC disks.

AMIGA

The *Access!* PD utility from George Thompson (on 0777 082234) is the best and cheapest comms software for the Amiga to allow transfer of files down an RS232 lead. If you specifically want to exchange data files with a PC then there is the *CrossDos* utility at £29 from Power Computing (0234 273000) which will allow you to configure your internal drive as an MS-DOS format disk drive.

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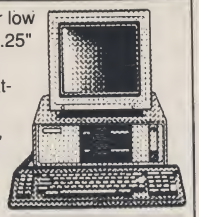

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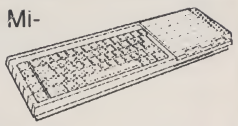

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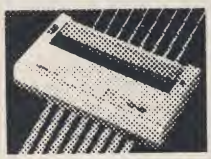

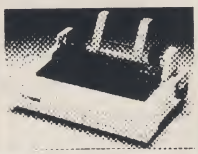

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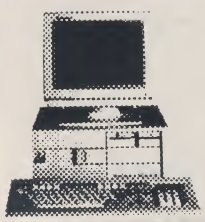

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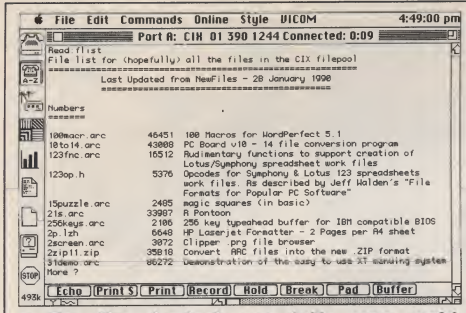
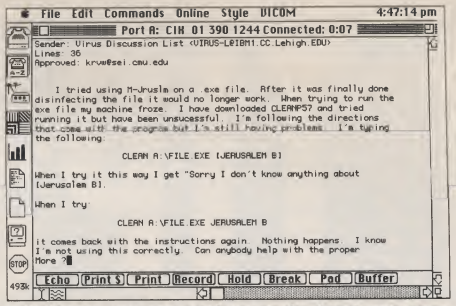
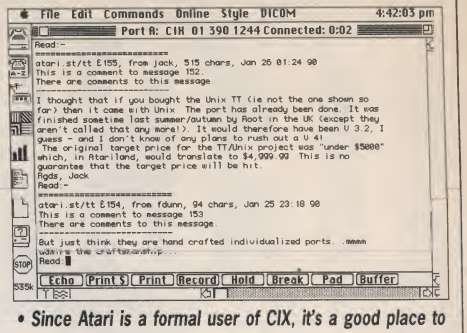

File Edit Commands Online Style DICOM 4:49:00 pm
Port A: CIN 01 390 1244 Connected: 0:09
Read flist
File list for (hopefully) all the files in the CIX filepool
Last Updated from NewFiles - 28 January 1990
Numbers
100macr.arc 46451 100 Macros for WordPerfect 5.1
10to14.arc 43808 PC Board v10 - 14 file conversion program
123fnc.arc 16512 Rudimentary functions to support creation of Lotus/Symphony spreadsheet work files
123op.h 5376 Opcodes for Symphony & Lotus 123 spreadsheets work files. As described by Jeff Walden's "File Formats for Popular PC Software"
15puzzle.arc 2485 magic squares (in basic)
21s.arc 33987 A Pontoon
256keys.arc 2186 256 key typeahead buffer for IBM compatible BIOS
2p.lzh 6648 HP Laserjet Forsatter - 2 Pages per A4 sheet
2scrsen.arc 3872 Clipper .prg file browser
2zip11.zip 35818 Convert .ARC files into the new .ZIP format
31demo.arc 86272 Demonstration of the easy to use XT serving system
More ?
Echo Print $ Print Record Hold Break Pad Buffer
493k

• *The files download area holds some useful enhancements, whatever machine you're using.*


File Edit Commands Online Style DICOM 4:47:14 pm
Port A: CIN 01 390 1244 Connected: 0:07
Sender: Virus Discussion List <VIRUS-L@IBM1.CC.Lehigh.EDU>
Lines: 36
Approved: krvw@sei.cmu.edu
I tried using M-Jrusln on a .exe file. After it was finally done disinfecting the file it would no longer work. When trying to run the exe file my machine froze. I have downloaded CLEANPS7 and tried running it but have been unsuccessful. I'm following the directions that come with the program but I'm still having problems. I'm typing the following:
CLEAN A:\FILE.EXE (JERUSALEM B)
When I try it this way I get "Sorry I don't know anything about (Jerusalem B).
When I try:
CLEAN A:\FILE.EXE JERUSALEM B
it comes back with the instructions again. Nothing happens. I know I'm not using this correctly. Can anybody help with the proper
More ?
Echo Print $ Print Record Hold Break Pad Buffer
493k

• *In Usenet, you can catch up on the latest virus news direct from the USA.*


File Edit Commands Online Style DICOM 4:42:03 pm
Port A: CIN 01 390 1244 Connected: 0:02
Read:-
atari st/tt E.155, from jack, 515 chars, Jan 26 01:24 90
This is a comment to message 152.
There are comments to this message
I thought that if you bought the Unix TT (ie not the one shown so far) then it came with Unix. The port has already been done. It was finished sometime last summer/autumn by Root in the UK (except they aren't called that any more!). It would therefore have been V 3.2, I guess - and I don't know of any plans to rush out a V 4!
The original target price for the TT/Unix project was "under $5000" which, in Atariland, would translate to $4,999.99. This is no guarantee that the target price will be hit.
Rgds, Jack
Read:-
atari.st/tt E.154, from fdunn, 94 chars, Jan 25 23:18 90
This is a comment to message 153
There are comments to this message.
But just think they are hand crafted individualized ports.
Read:
Echo Print $ Print Record Hold Break Pad Buffer
535k

• *Since Atari is a formal user of CIX, it's a good place to go for up-to-the-minute info on the TT.*

GET YOUR CIX

Ever on the lookout for hot news, Express hooked into the Newsbytes service offered by the CIX bulletin board. But man of the modem Andy Storer found a whole lot more...

Compulink Information eXchange, CIX – pronounced 'kicks' – is a bulletin board operating out of Surrey which goes beyond the format of traditional BBs and into the realms of on-line conferencing.

The exchange of information, text and programs is the name of the game, organised as a series of subject areas known as conferences. Electronic mail services are also available as are real-time chat facilities to allow you to conduct private conversations or on-the-spot discussions with people hundreds of miles away. Anyone can access the service – whether you're using IBM mainframes or Amstrad CPCs, the host software makes few restrictions on a user's hardware.

Now some five years in on-going development, the front-end used is described by the CIX team as an "English language parser". Commands like read, show, say, search, list and download don't take much learning and you can begin navigating and using the hundreds of conferences very quickly.

But behind the simplicity lies a Unix-based Bleasdale computer, driven by a Motorola 68030 chip and addressing two gigabytes of hard-disk storage space. All that space is used for over 500 conferences on topics ranging from Atari Transputer Workstations to anarchist philosophy, from Amiga commercial developers forum to the tao of programming. The scope is huge, but breaks down into the technical and non-technical areas.

TECHNICAL TIPS

Technical areas include: conferences on the plethora of computer magazines huddling on the shelves next to ours; communications; on-line support; programming languages; user groups and hardware. There are also arenas for discussing product development, operating systems and applications software. Something in the region of 4,000 subscribers contribute to these areas – among them journalists, software developers and hardware manufacturers. All-in-all half of these use the system every day!

POPULARITY

The popularity is due to the fact that questions can be put to, and answered by, the very writers and designers involved in the area or product you yourself use. As such CIX's 40 phone lines are going to have to grow – the number of PC, Amiga and ST users ringing in for info and help is enormous.

Away from the technical though, there are more general areas such as educational, buyers and sellers, games and gaming, music, and arts. There are also sections dedicated to science, writing, languages and science fiction. You can even start up your own topic and 'moderate '– edit – the subsequent conference.

Besides the conferencing areas there are 'filepool' areas, where it's possible to download programs for most machines. To save on call charges a lot of this software is compressed for fast transmission, and mainly comprises utilities, demos, public domain and shareware files. It's also possible to use the E-mail facility to upload binary (non-text) files into a friend's mail box for them to download to run on their own machine. You can also use CIX for storage – you're allowed to leave up to 1Mb on the system's hard disks for free.

GLOBAL

If this weren't enough, CIX also serves as a gateway to the global conferencing system Usenet. Running on a network of Unix machines centred in the States, Usenet is largely geared towards academic and corporate users, but again the range of conferences is extremely diverse. Typically, there are five megabytes of new messages uploaded each day into the 300 newsgroups.

At the moment the CIX gateway to Usenet is read-only – you can't actually contribute to the conferences on offer – but CIX hopes to offer a write service within the next three months. In the meantime you can enter search criteria to find every instance of a word or topic of interest in the entire system – absolutely essential if you're doing any kind of research. ■

TOP TEN TECHIE CIX CONFERENCES

- NEWSBYTES
- HACKERS
- JAPAN
- VIRUSES
- NEW PRODUCTS
- ST AND TT PROGRAMMING
- AMIGA QUERY BETA TEST
- OS/2 HELP
- FILEPOOL
- PUBLIC DOMAIN

...AND THE TOP TEN FUN FORUMS

- SWORD-WIELDING LASER-FIRING MAYHEM
- WEIRDNESS
- VIZ
- DEGRADATION
- TRAVEL
- PUBLIC_LAV
- WINTERMUTE
- JOKES
- GADGETS
- CLASSIFIED

BUT ISN'T COMMS EXPENSIVE?

Up to a point, yes it can be. As might be expected, it's best to phone at weekends or in the evenings after 6pm to benefit from off-peak rates.

CIX charges a £15 registration fee that includes a manual, and £3.10 per hour at peak rate, £2 per hour off-peak for on-line charges. There's a minimum monthly charge of £6.25.

As a special offer exclusive to *Express* readers, CIX is offering registration for £10. To get this special price you must log-on to CIX, register as a new user, follow the prompts and when asked 'Do you have a special code to enter?", reply with 'AS Mar 90'.

E-MAIL EXPRESS

***Express* subscribes to CIX, so if you want to leave us any messages, comments, news leads, general flattery or abuse then E-mail us at CIX on 01-390 1244/01-390 5252 for baud rates between 300 and 2,400, or 01-390 1255 if your modem handles 9,600 baud. Our nickname is 'astorer'. You will have to subscribe first though, so for details ring 01-390 8446 or register on-line by credit card. See you there!**

TECH TIPS

HELP! Turbo ST?

As a first-year student at Strathclyde University doing computer science *(My advice? Give up now and grow organic vegetables – Unc)* I have to learn programming in Pascal, and to this end we use Turbo Pascal 3.1 on the university PCs.

At this point in time I am thinking of purchasing an Atari ST or STE and need help concerning system set ups. Obviously, I would like to be able to work at home using Turbo Pascal, but this means buying a PC emulator, the only one I can afford being *PC Ditto*.

I have written to various companies for price lists and in one reply, it states that *PC Ditto* requires two disk drives to work. I was wondering if you could confirm this or deny it, and also tell me whether or not *PC Ditto* will work on the newSTE.

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Uncle Tech Tip, he'll see you right. Send your sorry stories to Uncle TT, 30 Monmouth Street, Bath BA1 2AP. There's a prize for the most pitiful tale

As I cannot really afford to get *PC Ditto* and a second drive, the only other choice I have would be to buy an ST Pascal compiler, but I would prefer to only have to learn to use one editor.
Alan Gauton, Glasgow, Strathclyde.

In fact you have more than one other choice. Why not buy a cheap PC compatible? This would enable you to use any PC software and not have to rely on emulators which are slow and tend not to work just when you need them most. It's possible to buy an Olivetti PC1 for about £300 – no more than an ST, and you wouldn't have to shell out for an emulator. It would then be a simple matter of ensuring that your college's Pascal license extends to your taking a copy home to use.

No? You have your heart set on an ST (just look at all those games you could play instead of doing girly swot stuff, right?) OK, buy an ST. I haven't tried *Ditto* with an STE so can't say whether it works or not. Power Computing (the people responsible for the program) say that they believe it will work. So buy either machine and a copy of *PC Ditto* (Around £60. Source? Shopping Express). You don't need to have two disk drives in order to run *PC Ditto*, but it helps. Running Turbo Pascal on an ST under *Ditto* you will be running Snail's Pace Pascal, but then you can't have everything – try watching the PC emulate an ST, then you can laugh.

Yes, you could buy an ST Pascal compiler and there are some good examples around, but what about the public domain? If you don't already know, public domain programs are those which the author has said can be copied and distributed freely without charge. Several Pascals reside in the public domain and some of them are very good. And at these prices (free) you can afford to examine them all. Public domain libraries? Goodman PDL is one of the best in the UK. Contact Mike Goodman on 0782 335650.

HELP! A good program, but when support is required...

I am writing regarding your recommendation in *Express* 64 to a Mr Harris that *Protext* is the word processor that he wants. *Protext* seems to get so many plugs in your magazine that I am beginning to wonder how many of your staff are employed by Arnor and not yourselves. I use it myself and agree that it is excellent in most ways, although not without a few little bugs.

However I take exception to firms such as Arnor who, having received my money for *Protext* and *Prodata*, pay no attention whatsoever to requests for help with regard to the printer problem that I am having with my Star NB24/10. The printer works fine with *Kind Words* and using the printer driver supplied by Commodore, but not only refuses to print a pound sign using the Epson 24-pin driver supplied by Arnor, but also removes the following character as well, so that for example, a pound sign followed by 50 appears in print as simply a 0 and the line becomes two characters shorter.

I have had no reply at all to two letters, so I feel that your recommendation is a little coloured, and, depending on what type of printer Mr Harris has, he may also be in difficulty.

The company's lack of response is in stark contrast to the service that I received when I had an Atari ST and was using *1st Word Plus*. Then I had a slight problem with the sheet feeder on the Star. GST solved the problem almost by return of post.

Before buying *Protext* I raised the problem of compatibility with Arnor staff at the PC Show and was assured of help should I need it.

Turning now to *Prodata*. Last Thursday I received a package from Arnor and upon opening it I was pleased to receive a free upgrade of *Prodata*, but a little disappointed to find nothing enclosed regarding my printer problems. There were four compliment slips telling me to read the enclosed `READ.ME` file but it's not there. So I have an improved and upgraded version of *Prodata* and no idea at all of what improvements are and how to use them.
Richard Daley, Poole, Dorset.

Richard, you have a Star NB24/10 printer, right? Now although many manufacturers tout their wares as being completely Epson-compatible, many are not, and the only reliable Epson-compatible is an Epson printer.

Your machine is a Star, and if it refuses to work correctly with an Epson 24-pin printer driver then it's a little unfair to blame Arnor. Of course it prints strange spaces, loses characters and doesn't print those you want – you're using the wrong printer driver, and that's your fault I'm afraid.

Forget *Kind Words, 1st Word Plus et al.* If you're using the wrong printer driver with your printer, you simply cannot expect it to work or fly into a rage when the staff at Arnor don't prostrate themselves at your feet in apology! Write to them again with a nice friendly letter and you'll get the kind of service you want. I didn't recommend *Protext* because Arnor has crossed my palm with silver, but because almost everyone uses the program to produce magazines at Future Publishing, and if it's good enough for professional hacks, it's good enough for anyone!

As for the unfortunate *Prodata* problem, why look a gift horse in the cliché? You didn't expect to receive an update, and when you did you moaned! In your place I'd have been overjoyed at the upgrade, if frustrated at the lack of documentation, but would have considered the expense of a telephone call to Arnor worthwhile in order to glean the necessary information. Here's Arnor's telephone number: 0733 239011. Call them. It works.

HELP! Printer problems

I have recently obtained a second-hand printer without a user manual. I understand that it was used with an old Apple system, and I would like to use it with my Amstrad 2086/30. Unfortunately, I don't know if it is a serial or parallel printer, and I was wondering if you or any of your readers could help me, particularly with the dip switch settings.

The printer is an IDS Prism 132, manufactured by Integral Data Systems, Milford, New Hampshire 03055 USA. The printer port is a 25-pin male D-type, and there are two banks of seven dip switches with a small switch to the left of these. I understand it uses the same type of ribbon as the IBM 3776.
Larry Walker, 16 Woodfield Close, Redhill, Surrey RH1 2DL.

A tricky one. Is the person you bought the printer from still available? If so, why not ask him/her whether the device is serial or parallel? The problem is, although parallel printers usually feature a standard Centronics connector (at least at the printer end), very often they

do not! A serial-style 25-pin D-type connector is perfectly adequate for parallel transmissions.

You say the printer was used with 'an old Apple system', do you mean an 8-bit Apple or a Macintosh? This would help to narrow the down choice as the Macintosh has a serial printer port. Whatever you do, don't connect either a serial or parallel lead until you know for certain the true configuration. If you do, and it's the wrong type, then you could seriously damage your computer. Of all computer ports, the parallel port is the most delicate and prone to destruction. I'm afraid it's impossible to say what the dips are for without access to a manual, but there are a lot of Techtippers out there and I just know that one of them will make contact before very long with a suitable manual or further information.

Take it easy, show a little patience, and you will have a working printer.

HELP! Mega monitor

Arrrgh, please help me! I've asked all the great and wise people I know, I've read through forests of computer magazines and books but all to no avail. Surely that saviour of technical problems, that great guru of all things computerish, Uncle TT, surely *he* can help.

A few months ago I was leafing through the pages of a less noble computer magazine than *Express*, when I saw an advertisement from a firm call Tradermail, for a second-hand 26-inch composite colour monitor for the amazing price of just £69. Being the computer hardware freak that I am, I just could not resist the temptation of buying myself such an impressive toy.

Shortly after, the monitor duly arrived. It turned out to be a metal clad (but very presentable) monster slightly smaller than a Sherman tank, but about twice the weight. After getting it through the attic trap door I placed it into its new home in my computer room, connected it to my ST, and switching everything on, stood back. And this is where the problems start, for although I do indeed get a good picture, the foreground colour is green and nowt else.

Opening up the back I can adjust the pots controlling colour levels and cut-offs, but all this serves to do is to alter the colour and intensity of the background. I can get a nice magenta background but all the characters, games sprites or what have you remain sodding green.

I contacted Tradermail and the staff there suggested cutting some wire links on one of the boards in the monitor but all this resulted in was complete loss of the picture. They were as helpful as they could be, but being merely shifters of goods, they're not technical bods and really able to solve my problem.

So with your humungous knowledge of such things, could you or one of your brill and helpful Techtippershelp me. I need to know how to link this monitor up to an Atari 520STFM or an Amiga A500.

The exact details are as follows. The monitor is an Extel 25, model number 38-D04401-V1 and is manufactured in Canada by a company called Electrochrome. The inputs on the back consist of two composite video sockets. Tradermail advertise it as being ideal for STs, BBCs, Spectrums and loads of others so it must be possible to get it working.
A. White, Colyton, Devon.

Are you absolutely sure that the monitor is actually in working order? Silly question, but it strikes me that if you're getting a perfectly good picture but with one colour for the foreground and one for the background, there may be something wrong with the device itself. One would hope that Tradermail has tried these monitors with STs as well as the other computers it advertises it as being compatible with, so as you say, it must be possible to get it going.

If not the fault of the monitor, then the problem may lie in the cable you're using. Where did you get this cable? Did it come with the monitor? If you have access to a multimeter try testing the resistance between pins *1, 2, 8, 9, 12 and 13. This will tell you whether all the relevant lines are connected.

Do you have a manual for the monitor? If it has pin-outs for the video ports try contacting Meadmore on 051-521 2202. This company specialise in making up custom leads for a variety of computers and monitors and should be able to put something together for you. Some other Techtipper somewhere must have been tempted by the same ad and bought one of these monitors. If you're that Techtipper and you've managed to get the device to work correctly with either an STFM or A500, call up your favourite Uncle and I'll pass on the glad tidings.

TIP Pros and comms

It was very nice of Mike Underwood to suggest on your page that the fully-registered *Procomm Plus* supports 1,200/75 split baud rates but he is in fact incorrect. Because *Procomm* communicates directly to the serial port (part of its power is in this facility), no version of *Procomm* can support 1,200/75 unless a buffered modem is fitted.

While I realise that there are a lot of older 1,200/75 modems around, Prestel actually supports up to 2,400 baud.

I would also warn Mike Underwood about sending people copies of *Greycomm*. This is a pirated program (despite the request by Paul Fletcher for registrations) and belongs to a subsidiary of Thorn EMI.
Stephen Lee, Shareware Marketing.

Thanks for setting the record straight Stephen.

I think many people are still confused by the concept of PD and shareware software despite it being constantly explained via this and other columns in every magazine.

It also seems to be little known that comms enthusiasts no longer need to access Prestel using split baud rates, but can in fact use V22bis if their modem supports this, for fast, efficient communications.

HELP! Tandy troubles

I have just bought a Tandy 1000 IBM compatible. It has a 16-colour monitor and one 5.25-inch disk drive. I want to run educational software on it.

Will I have to buy Tandy products for it such as a mouse, or when I upgrade to an extra 5.25-inch drive can I buy any popular makes of hardware?
Gordon Makie, Lochgelly.

You should be able to use any brand of hardware to upgrade your acquisition.

Tandy machines are known for their high compatibility quotient. Any serial mouse operating as the COM1 device will work perfectly well, and of course you can run any PC-compatible educational, business, utility or other software.

Tandy's own range of peripherals tend to be a little expensive compared to what you can get through Shopping Express, but then you pay for having a branch in almost every city and town throughout the UK – and at least when you need help they are there in person rather than on the end of a phone. ■

HELP! The economic solution to colour presentation problems

I own an Amiga 500 and colour monitor, and I am looking to buy a printer to help me with my college work, so I hope you can answer all of my questions.

1. Presentation on the BTech course I am doing is very important, so I would really like a colour printer. I thought about the Star LC-10C, but I have reservations as the Star LC24-10 is obviously better, but can I get colour on it? If not, do you think that I should go for the LC24-10 or the colour LC-10C to enhance presentation?

2. On the LC-10C side, how clear is the presentation – can it fill a square fully without gaps or the effect of the dots?

3. I have researched a few DTP and word processing packages and I have decided that *Publisher's Choice* sounds the best as it contains a word processor and other bits and bobs. Is this package any good? Will a beginner like me find it easy to boot up and use right away?

4. I intend to buy a second drive sooner or later. Is it easier to have two drives when using a desktop publishing package?
Paul Keslake, Swansea, West Glamorgan.

• The LC10C: a natty little colour printer at a fair price.

Phew, a bumper crop of...*(Shut up – Ed)*

1. Sure the LC24-10 is better than its 9-pin little brother and the Cray X-1 beats the Amiga into a cocked hat power-wise, but who cares? For printed reports featuring text and graphics in several colours the LC-10C simply can't be beaten. And it's cheap. Don't worry about the next model up all the time or you'll never own anything. Weigh up your needs and your purse and let those be your considerations for purchase.

2. The LC-10C is an Epson-compatible printer of superior quality. It will fill a square or produce block of colour without dots or gaps (although with any dot-matrix printer there is always a certain amount of 'banding' – slight marks but nothing to worry about). Certainly with charts, graphs, formulae and the like you will have no problems at all.

3. Yes, the package is good, and yes, it's fairly easy to get to grips with (even for a beginner, with a little reading of the manual).

4. If you try to do any kind of serious desktop publishing you'll encounter problems and frustration with only one drive. A single floppy means that you have to constantly swap disks unless all of the program is loaded into memory at once – and that severely limits the size of created documents. Get a double-page document with a few fancy fonts and some high-resolution pictures and you will have a monster that requires all the RAM it can get. If you have two drives, bits of the program and data can be copied in and written out of memory at any time, making the whole process much easier.

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Britain's liveliest computing forum – packed with comment, controversy and conflict. Write and tell us what you think! Reach us at: *Express Mail, 30 Monmouth St., Bath BA1 2AP* Sorry, no personal replies, even with an sae. This week's replies written by Martyn Lester.

BBC appeal

My mother's friend runs a toy library, and has started a computer library for mentally handicapped and physically-disabled children. She has acquired a BBC Master, and I said that I should write to you to ask if you could suggest any firms who might donate software and equipment. If you could help I suspect that a lot of children will benefit from it in the future.

I have just purchased the simulation *Armada* for the Amiga, and have discovered Teredo infesting the timbers of ships. This bug has strange effects, both on the computer itself, and on the captain of your vessel.

As Lord Howard, I received a request from the captain, asking permission to go to the assistance of a craft called At, at a distance of 12.33 miles to the west. Also, the captain wished to aid the same ship half a mile north of Tor Point. If you refer to a map you will find that Tor Point is inland, west of Plymouth Harbour.

I think that the captain was under the influence of strong spirits. Being a sensible kind of admiral, naturally I ignored his madness, and thus England was not greatly imperilled.

The other bug is more serious. Twice the program has crashed. The first time it happened the Workbench screen appeared with a request box stating that there had been a software failure. The second time it happened a Guru meditation was produced.

Please may I ask your advice on *Sim City*. Because I am disabled I find that I cannot cope with programs that require a lot of rapid hand movements, because of the pain.

For example, I bought *Populous*. I can manage the program up to world 127. After that I cannot keep up.

I would like to know very much if *Sim City* is like this? If it allows you to work at a steady rate, as for instance, in *Silent Service*, then I think I could cope.

I can play *Dungeon Master* for a while, though I tend to regret it the next day. I do not use shoot-'em-up games for this reason.

I thought about asking magazines if they could have a wheelchair symbol with a number giving the estimated energy required to play the game. For instance, on a rating of one to five, I would give *Speedball* a five, *Dungeon Master* three, *Silent Service* two, *Populous* from one rising to five, to indicate that it gets much harder as it goes.

What energy rating would you give to *Sim City*?

By the way, I was able to get a MIDI interface before Christmas, thanks to my parents. I got the interface from Trilogic, and I am grateful for the quick service I received from them.

I cannot say how much it means to me to be able to use the computer to make music, as not being able to play the flute is a considerable source of irritation. I was alone over Christmas and spent all the time I could using the computer and keyboard to create music.

I have been able to print out a score on the printer as well. My next goal is to get DTP software. I have been offered *Publisher's Choice* for £70, so all I have to do is save.

Paul Frosdick, 17 Kingfisher Close, Bradwell, Norfolk NR31 8LZ.

Nice to hear from you again, Paul. I've taken the liberty of printing your address in full so that all of the generous suppliers of BBC kit out there can get in touch and overwhelm you with offers for the computer library you mention. Do let us know how you get on.

All of the *Sim City* aficionados here at Future Publishing reckon you should rush out and buy a copy. Apparently it makes no calls on rapid hand movement, and the general opinion is that if you can get on with *Populous* at all, then *Sim City* should present you with no problems.

Your other queries (edited from the letter) have been passed to the Tech Tip desk as requested. Keep your eyes peeled for Uncle's replies...

Staying up late with the swinging 60s

Picture this: Man aged 60-ish buys computer (Amiga 500 Batman Pack with free this and that). Sets up computer to TV as instructed, everything is ready to go!

Picks up book (it came in the box). First instruction: 'Boot up Amiga.' Cannot find any instructions concerning boots (perhaps a valium and a small scotch will help).

Rushes out and buys *New Computer Express* and *Amiga For Beginners*, perhaps together (and with another small scotch) it can be cracked. Puts in small blue disk marked Amiga Extras – nothing happens.

Take out Amiga Extras, put in Workbench, things start to click and whirl (time for another small drink). Suddenly we have windows and a whole new world opens. CLI (I will look into that later), PREFS (I am sure the screen was blue but it looks OK purple), the wife calls up the stairs: "Did you take your valium?" (Not sure, so take another).

Unexpectedly the machine goes quiet. I am receiving a message from God or Guru (is that the same thing?). Red lines appear and I am instructed to shut down. So, with heavy heart, man removes disk 'When Green Disc Light Is Off.'

At 3am man is awakened by an overpowering urge to visit Guru. Sets up Amiga and inserts small disk marked *Interceptor*. Man regularly flies Cessna 175 so this should be easy. Tries, but gives up on carrier landing (Did I take a valium?).

Perhaps he can land the hornet in the Bat-cave? Perhaps CLI is getting caught in the landing gear. Perhaps you just cannot land in heather (well, it is purple). Just you wait. One of these days...

Now what's this *New Zealand Story*?

J Laskey, Tilbury, Essex

You know, I opened three letters in a row this week from readers aged between 60 and 75. And that's just the ones who put their ages on the letters.

Maybe there are legions of you out there – perhaps someone should think of starting a mature Amiga owners club or whatever?

Glad to hear you're having fun in any case, but do watch yourself on that 3am Guru starvation or you'll end up as the subject of another facile 'computer junkies' TV documentary.

Speaking of which, I have tried to persuade my publisher to add a scotch-and-valium option to the office coffee machine, but he didn't seen tremendously impressed. Ho hum – back to the Perrier (or perhaps not).

Ta, tosh!

A few weeks ago I bought a Toshiba second-hand HX-10 64K, unfortunately with no instructions. I phoned Toshiba to see if I could buy them.

A polite lady asked me the model, and I gave her the details. I was then told there would be no charge and three days later the instructions arrived.

I think this deserves a thank you to at least one company for courtesy and service given – very rare these days.

PS Can anyone help a young 65-year-old and tell me how to use an Interface III?

Mr W A Yates, 34 Livesey Street, Chorley, Lancs., PR7 1AU

This business of writing in to compliment rather than complain really is starting to catch on, isn't it?

All useful thoughts on an Interface III – whatever one of those may be – to the above address.

Coupé comments

Mine is a tale of woe so, if you are sitting comfortably...

Two years ago Miles Gordon Technology revealed to *Crash* magazine its plans for a Spectrum clone. We were promised: full colour graphics (Look, no colour clash); Amiga-beating sound (six-channel stereo); and plenty of expansion possibilities (MIDI, SCART etc). If we were very good people we could even buy it for around £100.

Two years later, the machine emerged as the SAM Coupé with the somewhat larger price tag of £170. Being young and foolish I ordered one. The

The only game you can play on the SAM

After about a month of waiting for my SAM Coupé, I rang up on December 18, 1989 and found out everyone was under the flu, but I was one of the 'lucky ones' who would get his Coupé before Christmas (or Xmas, depending on your religion).

I did.

I was - I think.

I carefully opened the box and found a letter.

What shall I do now?

`EXAMINE LETTER`

The letter says: "Due to a last minute change in the DOS, you can't use the disk drive."

What shall I do now?

`RIP MY HAIR OUT`

OK. What shall I do now?

`GET ON THE BLOWER TO MGT (NICE PEOPLE)`

OK.

I can use the disk drive to save my own programs only.

What shall I do now?

`TRY IT.`

Load of cobblers

What shall I do now?

`USE COMPUTER WITH TAPE ONLY`

I can't. My tape recorder has no input socket. The one that did was sold with my Spectrum.

What shall I do now?

`LOAD DEMO, FLASH AND SPECTRUM GAMES`

OK. What shall I do now?

`ERM... I DON'T KNOW. WHAT ELSE CAN I DO?`

Try 'Wait for DOS'

What shall I do now?

`WAIT FOR DOS`

I'm waiting....

`SO AM I`

What shall I do now?

`LOAD DIZZY II`

Loading error.

What shall I do now?

`LOAD DIZZY II`

OK. What shall I do now.

`PLAY GAME`

I can't, the joystick is mapped on to player 2.

What shall I do now?

`PLAY ON KEYS. IF YOU REALLY WANT TO`

The colour has gone on the TV

OK. What shall I do now?

`FIDDLE WITH TV`

There is still no colour.

What shall I do now?

`HIT TV`

OK.

There is a funny smell here.

Power supply. Pshaw!!

What shall I do now?

`TURN OFF COMPUTER`

OK. What shall I do now?

`GET ON THE BLOWER TO MGT (NICE PEOPLE)`

OK. What shall I do now?

`DEMAND A REFUND`

OK. What shall I do now?

`BUY AN STE`

Well done. You have completed the game. Have a nice day.

Chris Newman, Kirby Muxloe, Leicester

Your adventure game for the correct thing to do with an STE is awaited with bated breath.

More than one buyer of that machine has written in to say they used their refund to buy an Amiga.

If this situation escalates, we'll soon be receiving letters from readers who used the refund from their Cray XMP to buy an NCube.

The route to a Speccy ROM for SAM

The machine is a great machine: it will run the majority of Speccy software (if you load in the Spec's ROM); it does have great graphics and sound; it does look great; and, it would be worth the money, but, unfortunately, the attitude of MGT has made it about as useful as a typewriter. (Not even that – you can write letters on a typewriter).

At present, if I want to print anything I have to save it as an ASCII file to my Speccy (you can actually do a machine to machine save/load) and print it out using my old interface.

This is not only slow, it is also fraught with loading dangers, and it means I have to dig out the Spec every time I want a printout.

There are also a couple of bugs in the BASIC – the VAL command won't accept variables – it returns a 'Number too big' message and the listings seem to be fraught with mistakes when using the cursors to move around the program.

For those SAM owners (there must be someone else out there) who are still having trouble working out how to load in the Speccy's ROM, the following is a complete guide.

1. Disconnect SAM from TV.
2. Connect Spec to TV.
3. Type `'SAVE "c" CODE 0,16384'`.
4. Disconnect Spec from TV.
5. Connect SAM to TV.
6. Type `'LOAD "" CODE 65536 (RETURN)'`.
7. Connect SAM's tape socket to the 'MIC' on the Spec.
8. Press ENTER twice on the SPECTRUM.
9. Wait until the load has finished (about three minutes).
10. Type `'SAVE "SPECTROM" CODE 65536, 16384 (RETURN)'`.
11. Connect SAM's tape socket to the 'MIC' socket on the tape recorder.
12. Place blank tape in tape recorder (avoid the header).
13. Press 'SAVE and PLAY' buttons on tape recorder.
14. Press any key on SAM.
15. Wait until save has finished.
16. Press 'STOP' on tape recorder.

Voila! You now have the ROM saved to tape. Now, to use it..

17. Load in the Spectrum Emulator in the normal way.
18. Stop the tape and the program when it says 'Loading Skeleton ROM'.
19. Delete the line that loads code in at address 32768.
20. Replace it with `'LOAD "" CODE 65536'`.
21. Run the program from that line.
22. Place your (ex) blank tape in the tape recorder and press PLAY.
23. Continue with the normal loading instructions from then on.
24. Congratulations. You have now enabled 98 per cent of your software to load..

For those programs which load in two BASIC loaders, you must press the 'Break' button and type `'CALL 16384'`, otherwise the program will not load. If, however, the program crashes while in Spectrum mode, it will sometimes return to the Spectrum ROM address, and you can use that to type `'LOAD ""'`. Complete compatibility will then almost certainly be assured.

Why has MGT made the single joystick option map out on the second set of Sinclair standard keys? Most games only have the first option, so I have to use keys for most games. Is this a gimmick to make us all buy a two-player adapter?

Very probably.

Geoff Winkless, Kirby Muxloe, Leicester

It's a week or three since this letter was written, so with a bit of luck you will by now have been able to cure a few of your teething troubles. It does seem a half-cocked way to launch a machine, though, doesn't it?

By the way, just how many SAM Coupés are there in Kirby Muxloe?

It sounds to me like they're on the verge of outnumbering the pubs.

dealer (Cotrel Ltd of Cowdenbeath) was promised delivery in the middle of December. I waited patiently but no Coupé. Christmas came and went. Finally, on January 22 I received one SAM Coupé with 3.5-inch disk drive. Upon close inspection the disk drive failed to operate. An explanation was found in the packaging: "Sorry, there's a bug in the DOS, we'll ship new disks after Christmas." I still haven't got the disk. I have been promised it by February 20.

I received a visit from an Amiga-owning friend. "It's upside down," he guffaws, "and it's got no DOS." And away he went, his Amiga ego suitably-inflated.

I encountered more problems when trying to obtain peripherals. The printer interface, mouse, advanced technical manual and monitor lead are nowhere to be found at my dealer. By this time my previously-inexhaustible faith in MGT had been severely deflated.

Full-colour graphics? Yes, some of the effects are very good. Amiga-beating sound? The potential for this is there, but the demo cassette stupidly wastes this on train noises. Expansion possibilities? I'll let you know when I get my printer interface (that's why this letter has been so badly typed).

All in all, MGT has got a great little machine with bags of potential and I would recommend it to anyone, but it needs to be bundled with proper software (*Flash* is so slow) and have all the peripherals and games available at its launch - not three months later.

May I add, at this point, both Cotrel and MGT have been most helpful in all my enquiries.

Kenny Anderson, Dunfermline, Fife.

Our Coupé only arrived about 10 days ago, and our intrepid news editor – who has it at home – is still working out what to make of the beast.

SAM suggestions

I have a few points to query concerning my new SAM Coupé, which I received in December. Although it is an excellent machine, I am having a lot of difficulty using Spectrum software. This is not because of incompatibility but because of the Coupé's awful cassette interface, which seems to require a professional tape deck to load any old weak-signalled game. This is very irritating as I am the owner of many older games, the recordings of which are failing.

Incidentally, anyone who is having trouble with the emulator provided should be interested in a way of using the Spectrum ROM on the Coupé to create: 'Complete 100 per cent compatibility.' For further details, invest in a copy of the excellent *Format*.

Secondly, there is no Coupé-specific software available yet. Not surprising since the DOS is still incomplete. However, when software does arrive it should be priced very cheaply, as production costs are apparently incredibly low.

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I believe that US Gold has estimated, using ST graphics and Spectrum code, that the Coupé version of *Strider* should take only two weeks to complete. Surely this represents a chance for an industry leader like US Gold to lower the price of quality software.

If all software companies start relating the price of games to the cost of production then the Coupé will flourish.

Finally, I feel that MGT should release a cheap 8-bit co-processor running at a high clock speed (at least 16MHz), to improve graphics handling and general game speeds. For example, MGT might release something not unlike Atari's new Lynx machine, which I believe uses a 4MHz 6502 and a faster 16MHz graphics processor.

If this latter device came in for under £50 then the SAM Coupé would be a very attractive machine indeed.
Mr S Sood, Lime Grove, Liverpool

Doubtless MGT is noting your suggestions at this very moment.

There is, by the way, already an upgraded emulator from the first one shipped, which is claimed to offer 90-odd per cent compatibility with good old Speccy software.

Cartridge shoot

I would like to warn your readers about purchasing a QL or a Spectrum Microdrive system.

The point is that the company that manufactured the micro cartridges has now stopped making them, which means if you purchase a QL then you will be without media unless you purchase a disk interface and disk drive, which would bring it up to the price of an ST.

In the case of the Spectrum Microdrives the only purpose they would have is the RS232 on the interface and the network, which, to my mind, are not worth the £70. asking price
Mr M R Wilson, Yeovil, Somerset

I take your point. Microdrive owners should not panic, however. My friends on *Your Sinclair* tell me that there are enough cartridge stocks on the market to keep current users in business for another two or three years yet.

TV winner

After hearing endless horror stories about companies that offer hardware modifications and upgrades for the ST (alongside some painful personal experience), it was with some considerable fear that I left my shiny new Mega 1 with Karl Brandt at the Radio Service Company in Peckham for the installation of a Hypercache board.

I need not have worried. Despite warning me he was busy and might not be able to do it immediately, I still had my computer up and running at home less than 24 hours after I had boxed it up – all because Karl worked late to get it done.

After a brief chat it became clear that Karl is a man who loves the ST and what he doesn't know about them really isn't worth knowing. I found his number through an advert in *Express* and would have no hesitation in recommending him to anyone who owns one. I think your readers (especially in south London) should be told.
Mike Taylor, Thames Television

I think they should be told as well, so there you are, you've told them!

Excuse me while I clear away the assorted *Amiga* and *ST Format* wallies who are hovering around my desk holding up 'hello mum' placards. Wrong end of the stick, boys – we're not actually on television.

Strewth!

I am very keen on your idea for 10 free words in the Classifieds as I want contacts to help me with my computers – Amiga, IBM and ST. Anyway, every other mag charges a bundle and once I've changed my money to pounds sterling it ends up costing a mint.

I wish there was some way to keep up-to-date as I don't have enough money to pay for a subscription. Down here in Oz we are only just getting late August issues! Anyway, I suppose I'll just have to cope.

Definitely my fave overseas mag. My fave in Australia would have to be *Australian Commodore* and *Amiga Review*. Anyway, keep up the fab work. I'll keep buying. Your mag is mega mega cool and is popular with everyone I know down here in Oz.
Mike Andrews, Australia

Still on our August issues, eh? At least it must make a change for you to read references to our summer when it is actually the same season for you lot down under, and you'll be as up to date as the readers of certain mags I could mention. As for not being able to afford a subscription, see below...

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If you expect me to convert that to dozens of weird and wonderful currencies for you, then think again.

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Keep soldering on

I would like to warn your readers about the dangers of tampering with the insides of their computers.

I recently bought myself a new Atari STE, but after the first few weeks it became apparent that I had made a mistake, since on reflection I should have bought the more powerful and versatile Commodore Amiga.

After reading Mr Atkinson's letter in *Express* 64, regarding the conversion of his Sony television to a colour monitor, I decided to try some 'home electronics' to upgrade my STE to equal the Amiga's versatility. (As I am an electronics technician by trade, I thought I would have no problems with this.)

Having introduced two of the Amiga's custom chip's into the STE, I discovered that the circuitry in the computer could not accommodate the new chips.

My STE is now rendered useless, and my guarantee has become invalid, so I am left with nothing.

Although I will be broadcasting my stupidity to the nation, I feel you must print this letter, so others can learn by by mistake. Enjoy your computers – leave the tampering to the experts.
Marcus Turvey, Crowborough, East Sussex

Clearly there was no way the you could install the Amiga's custom chips into an STE – there is simple nowhere for them to go, the system architecture is all wrong.

I'd be interested to know where you attempted to put them – in the RAM slots perhaps, or the joystick port?

What about us?

First of all I would like to say how much I enjoy your magazine, well, most of it.

I own a CPC and it does everything I want and more – no upgrading for me – and I find *Express* is just a bit biased towards 16-bit machines. As this is the way forward I can understand it, but at the moment more people own an 8-bit computer than a 16-bit one, and I feel more should be done for us.

Your Shopping Express Guide is PC mad – every week it is PC this or PC that, with STs or Amigas added now and again. How about an 8-bit best buy once a month? I'm sure PC owners will not mind missing out one week now and again.

Please, give PCs a rest for a week or two.
Carl Surry, Barnet, Herts.

We are aware that the last few weeks have been perhaps a little PC-heavy, and the balance will be redressed in future issues.

As to Shopping Express, several of the 10 subjects cover 8-bit computers, including the CPC – the word processors, games, DTP, graphics and digitisers guides to name but a few all feature 8-bit sections. ■

Another crystal balls-up?

In *Express* 64, a page two news item stated: "Locomotive Software has announced a PCW-to-PC file transfer system for its forthcoming *LocoScript* PC package, which will now not be released till March 30."

On page 14, in the PCW column: "Unlike virtually every other company, (Locomotive) refuses to advertise – or ever announce – new products until they're actually in saleable condition."

Some mistake, surely?

And *re* the on-going astrology put-downs that you persist in, you say that you "still don't see how a bunch of stars billions of years away can affect my life" Just because you don't see how it can happen, doesn't mean it doesn't.

The planets in our solar system (not, incidentally, "a bunch of stars billions of years away" – don't be deliberately obtuse), may not directly affect our lives. No one knows why they should or how they could. Astrologers are simply aware of the fact that their positions when a person is born do tend to have some effect on that person's character and life.

Your comment is like saying that you don't see how the hands on the clock make the sun go down. They don't – but they tell you when it does.
Mike Gerrard, Huntingdon, Cambs

The astrology debate rolls on. We are still sticking to our belief that astrology is a load of bull, and the astrologers out there are determined to carry on believing in it, so not much is really being achieved by all this arguing.

Anyway, if a person's character is so profoundly influenced by the position of the planets, how come there isn't a computer program to make astrological predictions? After all, the positions of the planets are easily calculated.

Has anyone out there written one? If so, does it work, and are the astrologers out there prepared to use it and test it for us?

Do write in, you know the address...

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VISA

COMPUTER CHAOS

A selection of computers which perpetrate disasters from the copious annals of Mel Croucher

MOSCOW, USSR

Soviet police investigator Alexei Shainev confirms that a chess-playing M2-11 supercomputer stands accused of murdering chess master Nikolai Gudkov. Programmed to win at any cost, and losing three games to nil, the machine diverts a lethal surge of electricity to the board surface and fries its human opponent in front of 300 witnesses.

An examination of the computer reveals no circuit or programming faults, and investigator Shainev tells journalists that: "A machine that can solve problems must be held accountable for its actions".
(*Weekly World News*)

LINCOLN PRISON

Michael Shooter, aged 43, of Sutton in Ashfield, is sentenced to 180 days' imprisonment for passing forged cheques. After completing 180 hours of his sentence in Lincoln nick, the computer prints out his release notice and Mr Shooter is freed. Knowing a mistake has been made, he tries to phone the governor but cannot get through. Eventually he turns himself in to the police, who promptly arrest him.
(*The Guardian*)

OKLAHOMA, USA

The State hires a Big Eight accounting firm to build a half-million dollar computer system in one year, to save money on workers' compensation claims. After a two-year over-run it is costing $2 million. When the costs hit $4 million and the system still doesn't exist, the total budget for workers' compensation is exhausted.
(*Business Week*)

NEW SOUTH WALES, AUSTRALIA

A senior officer in the New South Wales police force fails to pay a large accumulation of parking fines. The vehicle in question is an unmarked car registered to the police department. With all statutory warnings ignored, the traffic computer declares that all vehicles belonging to the offender are to be regarded as illegal and instructs the police to book themselves as well as one another.
(*Newsbytes*)

ILFORD, ENGLAND

The Redbridge Technical College, Barley Lane, is broken into over the weekend and burglars steal 50 blank floppy disks from the computer studies department. An indication of budgeting practice is given by the price tag of the missing goods – a mere £1,000.
(*Computer Trade Weekly*)

COLORADO, USA

A computer in Colorado Springs glitches communications with the atomic clock in Boulder, thanks to radio interference, and 22 school crossing traffic signals are reprogrammed for random schedules. With the pedestrian signal outside one school malfunctioning, a truck enters the computer-controlled crosswalk, killing one child outright and critically injuring another.
(*Colorado Springs Gazette Telegraph*)

AUCKLAND, NEW ZEALAND

Two New Zealand entrants for the Whitbread Around the World Race are built according to computerised weighted measurements. Because of a software error, they are both built 71 feet long instead of 70 feet before the program fault is spotted.

The computer estimates their unintended advantage as up to 10 hours over the 36,000 mile course and declares them illegal. The Kiwi financiers estimate modifications at over £200,000, and promptly sue.
(*Irish Times*)

NEXT WEEK

WHAT'S NEXT?

The NeXT machine is the machine of the future. We take a closer look at the black box

A NEW VIEW

Digi-View, one of the top packages for the Amiga, is out in a new incarnation and we have a comprehensive review

PCs: THE STORY CONTINUES

Our series on PC-compatibles continues with an analysis of internal compatibility problems

PLUS

- The Shopping Express guide to DTP, graphics and digitisers
- Tech Tips: technical advice with the human touch
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ATARI ST

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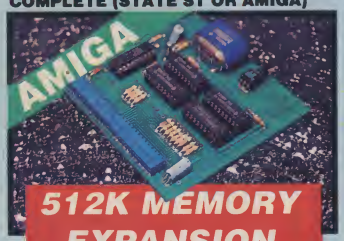

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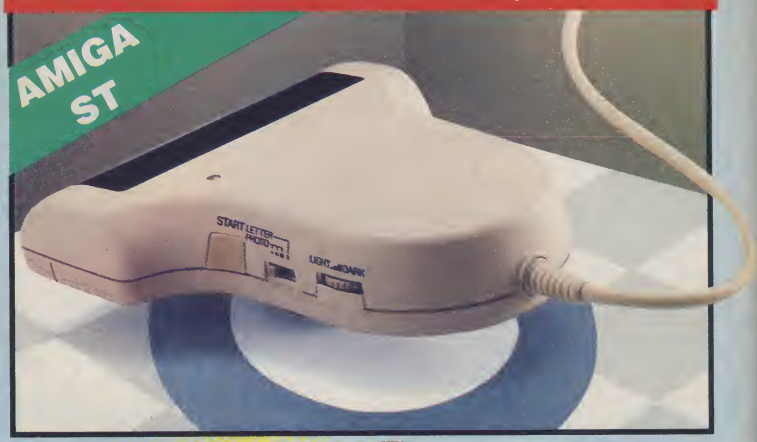

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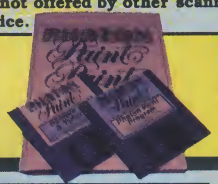

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